

perceptible cloudiness with the test, and the addition of oily, gummy and resinous substances to normal urines has likewise given consistently negative results. Numerous urines which gave misleading reactions with Heller's or the heat test because of substances which had been added to preserve the specimens, usually thymol or excessive amounts of formaldehyd, were found to be free of interference from such substances if the mixture was examined when warm. Thus, if read while the mixture is warm, the test appears to show serum albumin and globulin, exclusively.

When the mixture is cold, other proteins occasion opalescence or cloudiness, which clears rapidly on warming, the only exception being Bence-Jones protein, which gives a precipitate so characteristic that independent observers have used the identical expression to describe it. It looks exactly like "curdled milk," and does not clear up unless boiled.¹⁰

Secondary proteoses and protamins from spermatozoa fall out of solution and cause opalescence when the test cools. The microscope will differentiate these, and no confusion arises because the albumin precipitate remains unchanged whether the mixture is warm, boiled or cold, thus making the test practically specific for serum albumin and globulins.

Experiments with nucleoproteins extracted from yeast and thymus gland have proved negative, but, as these are not identical with urinary nucleoprotein, such experiments are merely suggestive. Of the last 60,000 urines examined in the Prudential laboratory, none contained enough nucleoprotein to be evidenced by the new test, although Heller's test occasionally suggested its presence, and the material of several large clinical institutions, during the last year, has not furnished a single specimen of urine containing a sizable amount of nucleoprotein. Evidently such urines are rarer than Bence-Jones specimens. The sensitivity of the test for nucleoproteins has, therefore, not been definitely established, and it is advised that a test for nucleoprotein be made separately by treating the diluted urine with acetic acid or Ott's reagent.

Urines that cannot be cleared may be examined for albumin by comparing the test as performed in the regular way with a control made by diluting the cloudy urine with an equal volume of clear water. The difference in cloudiness between test and control represents the amount of albumin in the specimen.

The most valuable feature of the test is its characteristic of inducing cloudiness directly proportionate to the concentration of albumin in the specimen, the difficulties in this respect encountered by Marshall, Banks and Graves¹¹ having been overcome, as already pointed out, by safely buffering against variations in salt content and hydrogen ion concentration through loading the reagent with salt and making it so acid that, when diluted with an equal volume of urine, the conditions necessary to constant uniformity of flocculation are attained, which makes a test truly quantitative. Dilution experiments with albuminous urines and a wide variety of normal urines to which given amounts of serum albumin were added have shown very satisfactory quantitative results with optical methods.

SUMMARY

This differential test for proteins in urine, with a single clear, watery reagent, keeps indefinitely and has these characteristics:

- 1 It is an exceedingly simple, rapid and accurate differential test
- 2 It does not react with the bases or salts found in urine
- 3 It does not react with resinous and similar foreign substances
- 4 It is free of the inaccuracies of layering
- 5 It does not require a fixed time for observation
- 6 It gives a definite prompt and reproducible endpoint
- 7 It shows albumin plainly in specimens that cannot be cleared
- 8 It is a shade less sensitive than the heat salt and acetic acid test
- 9 It is specific for serum albumin-globulins, Bence-Jones protein and secondary proteoses
- 10 It gives uniformly truthful quantitative clouds or precipitates adapted for optical measurement

ACTION OF STRONGER SOLUTIONS OF MERCUROCHROME IN EARLY GONORRHEAL INFECTIONS

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The advancement in the treatment of gonorrhea has not kept pace with that of many diseases. It is generally agreed that efforts to improve on the more or less standard forms of treatment have been relatively unavailing. The introduction of the colloidal silver preparations marked the biggest advancement in recent years and, still more recently, the development of the mercury derivatives, as carried on by Young and his associates,¹ offered hope for an immediate sterilizing injection. As in the case of arsphenamin, the chemicals did not effect a cure in a single injection, though Frontz² has about eight well developed cases in which the process was absorbed after two or three injections of 1 1,000 acriflavine.

In spite of adverse criticism, mercurochrome-220 soluble possesses some commendable qualifications. It is a solution and not a colloidal suspension, and therefore penetrates animal tissues better. It has great germicidal value, a solution of 1 1,000 killing *Bacillus coli* and staphylococci in urine in one minute. The toxicity is negligible in ordinary dilutions, and there is no precipitate in urine. Its irritating properties would seem to be the only unsolved problem in its use.

It has been shown that "in thirty-eight hours after inoculation the gonococcus has only begun to penetrate the epithelial tissues,"³ but that the penetration is a progressive one and extends to the subepithelial tissues. In the original experiments on mercurochrome it was shown that the urethral surface cells were most intensely stained, but that there was a diminishing amount of the stain toward the submucosa. The failure to get the germicide in sufficient concentration into the deeper epithelial layers and the glandular structures,

10 Through the kindness of Dr. H. M. Mosenthal of New York and Dr. A. H. Sanford of the Mayo Clinic, Bence-Jones specimens were received, and we were favored with their observations on the nature of the flocculation with our reagent.

11 Marshall, J. T. W., Banks, H. W., and Graves, S. S. A Study of Proteins in Urine. *Arch. Int. Med.* 18: 250-262 (Aug.) 1916.

1 Young, H. H., White, E. C., and Swartz, E. O. A New Germicide for Use in the Genito-Urinary Tract. *Mercurochrome 220*. *J. A. M. A.* 73: 1483 (Nov. 15) 1919.

2 Frontz, W. A. Personal communication to the author. Oct. 26, 1922.

3 Fenger, quoted by Keyes. *Modern Urology* 1: 59.

is, of course, the reason for failure to accomplish a quick cure

It seemed logical to me, therefore, that further study of the action of the germicides might be useful. After observing the action of the weaker solutions of mercurochrome-220 soluble in the urethra, a 2 per cent, then 3, then 4, 5 and even 6 per cent solutions were tried. More favorable results followed the use of the stronger solutions. There was evidence that the use of the dye alone did not give as uniformly good results as when it was used alternately with one of the colloidal silver suspensions—argyrol or its equivalent. Those patients applying for treatment early appeared to do better, and I began to follow a definite method, as the cooperation of the patients, all private, was good.

In those cases in which the patients applied for treatment within twenty-four hours after the appearance of a discharge, a microscopic examination was made and repeated every few days. The three glass test of the urines was made at each visit, and it was ascertained whether the previous treatment had been extremely irritating, and if any untoward symptoms were developing. Each morning a small quantity of 5 per cent mercurochrome-220 soluble was slowly injected with a blunt syringe, and was retained from three to five minutes. When considerable burning was produced, a prescription calling for oil of santal, 10 minims (0.6 c c), three times a day, after eating, was given the patient. On his return in the evening, a 25 per cent argyrol solution was substituted for the mercurochrome. This was a daily routine, and was varied only in the hyperactive cases or in those prolonged and complicated.

I have been able to follow forty-six cases until an apparent cure was effected. They show several points of interest. Thirty-one patients, or 67 per cent, had had previous attacks. One had had as many as seven, the last one occurring three years ago. Two years ago he was referred to me for a slight morning drop, and on removal of an anterior stricture the trouble cleared. He had no evidence of other remaining infection. One had a history of "at least ten" attacks, the last one occurring while in the service three years before. He has never had evidence of existing posterior involvement since coming under my observation, and there is no evidence of damage resulting from the former attacks in the anterior urethra. It is hardly likely that the attacks of these men were recurrences.

In age, the youngest was 19, the oldest two were 51 and 54. The more severe symptoms were complained of by the younger men, though the fact that they had had few or no previous attacks, and were exposed to the more virulent organisms in persons without previous attacks, probably accounts for the condition.

Where there was considerable active discharge, the mercurochrome injection produced considerable burning, but this was complained of only at the first visit. This burning rarely lasted longer than twenty minutes, and never was more severe than that accompanying the act of urination which one often sees during a hyperactive stage. In this series there are only five cases in which the 5 per cent mercurochrome-220 soluble was not used at first. One patient (Case 33) came in complaining of excruciating pain on movement of the penis. Examination disclosed considerable redness and edema of the whole organ, and a slight watery discharge negative for gonococcus. The history revealed that the injury was

not a result of the urethritis, but that the contrary was true. A positive smear developed in thirty-six hours, however, and no mercurochrome could be used for a period of one week.

A disappearance of purulent discharge was effected by the third day in 75 per cent of these cases. As long as there was macroscopic pus there were usually gonococci.

In ten, or 21.7 per cent, of the cases, posterior symptoms developed, the severity of which could not be found to differ from the usual incidences of such.

In only one case was there a folliculitis reaching any unusual proportions. Following a folliculitis two years previous, a hardened nodule, 3 mm in diameter, had persisted, and became the seat of a new enlargement which required external incision. The lesion healed with no appreciable scar or nodule. In no case were there symptoms of cowperitis. Arthritis occurred in Case 33 in which the penis had been traumatized. The patient's right wrist became involved within ten days but recovered under the usual care, and no further joints were involved. The relation of the trauma to the bacteremia is interesting.

Several men presented clear urines and no discharge after three or four days, but the injections were carried on a few days afterward to take care of any possible source of further trouble. Often the urines were examined, but no treatment was given after five or six days. One patient did not return after the first injection for a year, when he came in with a new infection and reported that "one injection had cured" him. The duration of trouble in the series is given in the accompanying table.

DURATION OF TROUBLE

Cases Number	Per Cent	Duration
32	69.8	7 days
2	4	10 days
3	6.5	2 weeks
3	6.5	2 weeks
2	4	3 weeks
5	10	6 weeks
1	2	15 weeks

Approximately 70 per cent of the cases reached an apparent cure in one week, and in ten days 75 per cent were cured.

Freedom from symptoms, both objective and subjective, constituted a "cure." Fully one half of the patients have been dismissed more than a year. There have been no recurrences.

COMMENT

As was stated in the beginning, the study made here was in an effort to get greater efficiency from drugs theoretically capable of producing better results. The increased strength was used to get killing concentrations after penetration. Alternating the colloid with the solution was done as it seemed to produce the best results though I am not aware of any synergistic properties that either chemical has. It is possible that even a weaker solution of mercurochrome-220 soluble, acriflavine or similar antiseptics would have been adequate substitutes for the 25 per cent argyrol. There has been no attempt to offer new records for quick cures. So far as the method of treatment is out of the ordinary, mention of it seemed justifiable.

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EPIDEMIC JAUNDICE IN NEW YORK STATE, 1921-1922

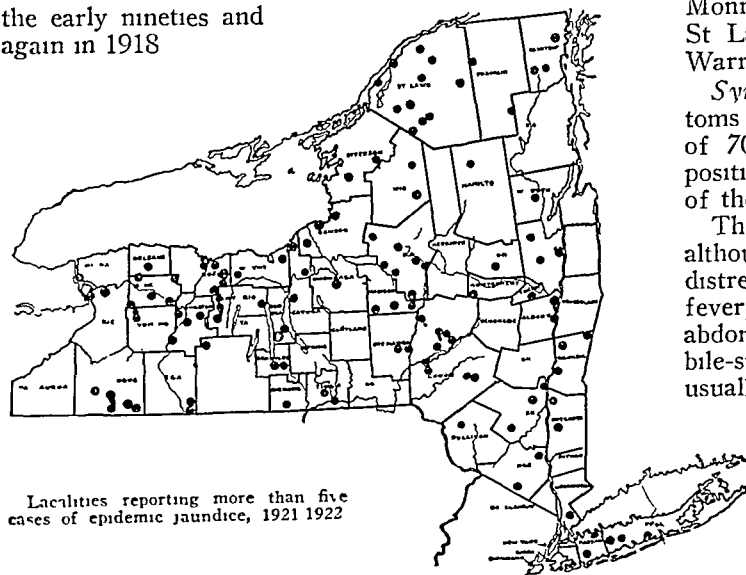
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Sanitary Supervisor State Health Department

ALBANY, N. Y.

During the winter of 1921-1922, New York State was visited over a very wide area by so-called infectious or epidemic jaundice. This disease was present at the same time in other parts of the country. Previous to the epidemic, localized outbreaks had been studied by the New York State Department of Health in the village of Philadelphia, Jefferson County, in the winter of 1915-1916, at Berkshire, Tioga County, in March, 1920, and in Chenango County during February, 1921. The disease as it appeared at Cooperstown, N. Y., during the recent state-wide epidemic, has already been described.¹

It may be noted that during 1896 there occurred at Albany a well-marked outbreak of epidemic jaundice. At Hudson, N. Y., a similar epidemic occurred a few years previously. Reports from practitioners indicate that at certain localities in Delaware County, Allegany County and especially in St. Lawrence County repeated outbreaks of epidemic jaundice have occurred at varying intervals during the last thirty years. Up to 100 cases appear in some of these reports, and nowhere were uncomplicated cases recorded which terminated fatally. Multiple cases in households and in schools were frequently found in these earlier outbreaks. This history is interesting as having a possible relation to the outbreaks of influenza in the early nineties and again in 1918.



Localities reporting more than five cases of epidemic jaundice, 1921-1922

The accompanying map shows localities in New York State which reported more than five cases of jaundice during the recent epidemic. Nearly all of these records are for the period between September, 1921, and March, 1922, the interval when the outbreak was state-wide in its distribution. For several of the foci indicated on the map more than a hundred cases were recorded, but the average number of cases for each focus was not more than thirty.

ANALYSIS OF SEVEN HUNDRED CASES

A detailed study of 700 cases of epidemic jaundice was made by the state sanitary supervisors in accordance with plans drawn by Dr. Edward S. Godfrey, Jr., director of the division of communicable diseases of the state health department. These cases represent approximately half the known cases that occurred during the epidemic in New York State (excluding New York City), and in addition there were many cases that were so mild that they were not seen by a

TABLE 1—OCCURRENCE OF SYMPTOMS

Symptom	Cases Positive		Cases Negative		Not Recorded	
	Num ber	Per Cent	Num ber	Per Cent	Num ber	Per Cent
Jaundice	647	92.4	11	1.6	42	6.0
Anorexia	574	82.0	68	9.7	58	8.3
Nausea	619	88.4	46	6.6	35	5.0
Vomiting	503	71.9	169	24.1	28	4.0
Headache	488	69.7	139	19.9	73	10.4
Constipation	463	66.1	110	15.7	127	18.2
Prostration	211	30.1	81	11.6	408	58.3
Clay colored stools	558	79.7	46	6.6	96	13.7
Bile stained urine	617	88.2	10	1.4	73	10.4
Abdominal pain	417	59.6	211	30.1	72	10.3
Fever	524	74.9	105	15.0	71	10.1
Chills	334	47.7	293	41.9	73	10.4
Limb pains	235	33.6	297	42.4	168	24.0
Diarrhea	106	15.2	442	63.1	152	21.7
Conjunctival congest	66	9.4	103	14.7	531	75.9
Epistaxis	61	8.7	525	75.0	114	16.3
Herpes	28	4.0	536	76.6	136	19.4
Hiccup	98	14.0	478	68.3	124	17.7
Unusual prevalence of rats on premises	167	23.9	262	37.4	271	38.7

physician or recorded in any way. The 700 cases here analyzed were reported from the twenty-five counties of Albany, Broome, Columbia, Delaware, Erie, Franklin, Genesee, Jefferson, Livingston, Madison, Monroe, Niagara, Ontario, Orange, Oswego, Otsego, St. Lawrence, Seneca, Steuben, Sullivan, Tioga, Ulster, Warren, Wayne and Wyoming.

Symptomatology—Each of eighteen common symptoms is recorded in Table 1 for every case in the series of 700 that were studied. Symptoms are reported positive, negative or not recorded, and the percentage of the 700 cases in each group is given.

The disease appeared to be mild in character, although the gastro-intestinal symptoms were often distressing. In typical cases there was a slight initial fever, with several days of anorexia, nausea, vomiting, abdominal pain, constipation, clay-colored stools and bile-stained urine. After this period, which lasted usually from three days to a week, jaundice appeared and the abdominal symptoms decreased markedly in severity. The jaundice persisted for varying periods from several days to several weeks. It was sometimes observed only in the eyes, but in other cases it was widespread over the body and of a deep shade. Convalescence was almost invariably slow, and was marked by prostration, very frequently of a severe type. In rare cases when seen in the prejaundice stage, there was noticed a faint rash on the arms and upper chest, together with a superficial tenderness and roughening of the skin in these parts. As a rule, however, no record was made of this symptom. The physician frequently considered the disease intestinal grippe, perhaps because the jaundice epidemic came fairly soon after the pandemic of influenza. In this connection, it is of interest to note that there was a moderate leukocytosis present in half of the cases at Cooperstown, which were studied early in the disease, and in no case was there reported a leukopenia.

¹ Williams, Huntington. Epidemic Jaundice. Report of a Local Outbreak at Cooperstown, N. Y., During a State-Wide Epidemic. New York State J. Med. 22: 150 (April) 1922.

Five Atypical Cases—Throughout the epidemic there occurred only five known fatal cases, in each of which there were complications. Two of these were in infants born to mothers ill with jaundice at the time of delivery. One infant was born jaundiced, and lived only thirty-six hours. The other was born with clear skin, but

TABLE 2—SEX DISTRIBUTION

	Number	Per Cent
Males	343	50.4
Females	340	49.3
Not recorded	2	0.3

on the second day after birth developed a yellow tint over the body. On the third day the baby began to bleed profusely from the bowel. This condition continued at intervals until the death of the child on the fourth day. The third fatal case was that of a girl, aged 5 years, who had very marked jaundice for two weeks, with constipation and clay-colored stools. The

TABLE 3—AGE DISTRIBUTION

	Number	Per Cent
From 0 to 4 years	46	6.6
5 to 14 years	31	5.7
15 to 24 years	12	1.8
25 to 34 years	0	7.1
35 to 44 years	9	8.4
45 to 54 years	2	3.3
55 to 64 years	0	2.9
65 to 74 years	3	0.4
75 to 84 years	1	0.3
85 to 94 years	1	0.1
Age not recorded	7	1.0
Total	700	100.0

child had an irregular temperature during this time, with marked prostration, similar to that of influenza. There were signs of encephalitis, and the chemical test for bile was positive in the spinal fluid. The fluid was of clear color, and gave a low cell count. Another fatal case was that of a girl, aged 6 years, whose jaundice was complicated by existing renal disease due to scarlet fever contracted a year previously. In this case the attending physician attributed death to acute nephritis. The remaining fatal case was that of a boy,

than half (51.7 per cent) of the cases were in the school age group, from 5 to 14 years and outbreaks often centered in a school, (3) in more than half the cases, the dates of onset were during the months of November and December, 1921, and (4) multiple cases in a household or a school were very common.

Dates of Onset—Of the 700 cases, the dates of onset in 672 cases were between Sept 1, 1921, and March 2, 1922 and are recorded in Table 4. In addition the onset in seventeen cases occurred between March 1 and Aug 31, 1921, and in eleven cases there was no recorded date of onset.

Multiple Cases in Household or School—Of the cases, 421, or 60 per cent, were multiple, that is, more than one case occurred in a household. The maximum number in a home was eight. In 83 instances, there were 2 cases in a household, in 33, 3, in 20, 4, in 7, 5, in 3, 6, in 1 instance, 7, and in 2 instances, 8.

In one instance (at Cooperstown, N. Y.), fourteen children in a one-room school of thirty-six pupils developed the disease, over a period of two and one-half months. In another school, all the pupils but two developed the disease. In a third school, the teacher and also the physician gave the information that nearly every child in the room had had an attack of jaundice, and in a fourth school district in St. Lawrence County, every child but one had jaundice, and in connection with the school outbreak other children in the homes had secondary cases of the same disease. This apparent susceptibility to infectious jaundice among school-children was also noted in an outbreak in St. Lawrence County which occurred about twenty-five years ago. In this connection, attention is again called to the age distribution of the 700 cases here reported.

LABORATORY INVESTIGATIONS

Special investigations were made by the division of laboratories and research of the state health department, with the hope of discovering the specific etiologic agent in this disease. Blood, urine, feces and throat cultures from patients with the epidemic disease were examined, and in no case were positive results obtained in isolating *Leptospira icterohaemorrhagiae* or any other organism of significance.

TABLE 4—DATES OF ONSET

Investigator	Counties	1921				1922			Total
		Sept	Oct	Nov	Dec	Jan	Feb	March	
Dr. Edward Clark	Erle, Niagara, Wyoming, Genesee	0	0	18	4	41	6	0	111
Dr. B. R. Wakeman	Livingston, Monroe, Ontario	0	6	58	5	18	0	0	114
Dr. S. W. Sayer	St. Lawrence, Jefferson	1	1	41	2	2	0	0	104
Dr. Huntington Williams	Albany, Columbia	1	4	13	1	25	14	1	—
Dr. W. L. Munson	Franklin, Warren	1	1	12	20	8	0	0	—
Dr. H. J. Ball	Madison	0	4	11	5	3	1	0	31
Dr. O. R. Hervey	Oswego, Wayne	3	2	14	24	1	0	0	44
Dr. F. W. Laidlaw	Delaware, Sullivan, Ulster, Orange	0	4	13	10	6	0	0	4
Dr. F. W. Sears	Seneca	1	0	6	3	9	0	0	—
Dr. Huntington Williams	Otsego (Cooperstown)	0	6	6	6	1	0	0	29
Dr. J. A. Conroy	Steuben, Tioga, Broome	4	1	3	3	1	1	0	14
Total		10	70	195	243	122	2	1	672
Per Cent		2.5	10.4	29.0	36.0	18.0	3.3	0.1	100

aged 14 years. He developed jaundice which cleared up after a week's duration. Two weeks after this the jaundice returned and became very marked. There developed typical symptoms of meningitis at this time, and the child died four days after the second appearance of the jaundice.

Epidemiology—It is of interest to note that (1) of the 700 cases studied, the sex distribution is almost exactly equal (50.4 per cent males), (2) a little more

COMMENT

The causative factor of the epidemic here described has not been determined. There is no evidence that rat-borne or other contamination of human food supplies was of etiologic importance. The relationship is uncertain between this state-wide outbreak and instances

2. Noguchi, Hideyo. Morphological Characteristics and Nomenclature of *Leptospira* (Spirochaeta) *icterohaemorrhagiae* (Inada and Ido). *J. Exper. Med.* 27: 575 (Mar.) 1918.

of infectious spirochetel jaundice that have been reported in Japan³ and in Europe⁴. The identity of the American type and the foreign type of infectious jaundice has never been established. On epidemiologic grounds there is a marked difference, in that the American type seems to be readily communicable by direct contact, and it occurs in quite well-defined outbreaks, especially among schoolchildren. These features are not characteristic of spirochetosis. It is not certain whether epidemic jaundice, which was known to Hippocrates and his disciples, and which is often spoken of as Weil's disease, is a single disease entity, or whether it may result from a number of different etiologic factors. Jaundice was prevalent among the federal troops during the Civil War, and has often been associated with troops in other wars.

Of 700 cases here analyzed, more than half were in children of the school age (from 5 to 14 years). Multiple cases in a household or a school were extremely common. The peak of the epidemic was in November and December, 1921. Marked prostration and slow recovery were characteristics of many cases of the disease. For these reasons, and because of personal observation of the Cooperstown outbreak, I am of the opinion that the epidemic jaundice that occurred throughout New York State during the winter of 1921-1922 was spread by droplet or contact infection from person to person, and that the etiologic agent of this epidemic may have been some unrecognized organism or virus that is carried in the nasopharyngeal secretions of persons ill of the disease.

THE HEART IN PERNICIOUS ANEMIA*

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BOSTON

The death of a patient ill with pernicious anemia, a few hours after a transfusion of blood, with symptoms reported to be those of acute heart failure, brought home to me how little I knew of the heart in this disease. The patient referred to had only 660,000 red corpuscles per cubic millimeter of blood. A series of three blood transfusions was given, resulting in some improvement with the first, a moderate upset with the second, and a severe reaction after the third. This reaction was described by the physician in attendance as being characterized by dyspnea and the disappearance of the pulse at the wrist, the heart sounds remained audible. It began before the transfusion was complete, and persisted until the death of the patient about five hours later.

What was the cause of the attack and subsequent death? Could there have been an embolus to the coronary artery, or could a large clot of blood have impeded the passage of blood through one of the cardiac valves? I was unable to answer these questions with any degree of assurance. In the hope of acquiring some information as regards the cardiac aspects of pernicious anemia, I have examined the postmortem records, and, through the courtesy of Dr. R. C. Larra-

bee of the blood service, electrocardiograms have been obtained of a number of patients affected by the disease.

No attempt has been made to record the clinical findings, such as murmurs. I believe that the systolic murmurs are usually of greatest audibility over the base of the heart and are especially well transmitted to the carotids. My experience also agrees with that of other observers who find that the murmurs appear first at the base and later extend to the apex, while on the recovery of the patient the murmurs disappear from the heart in the reverse order, i. e., from the base last.

PATHOLOGY

Eleven cases were found in the postmortem records of the Boston City Hospital during the period 1916 to 1921, inclusive. The data may be thus analyzed:

There were six men and five women. One patient was 28 years of age, but the remaining ten were in the age period of 50 to 70 years. Enlargement of the heart of a degree that should be recognized clinically was not found, the actual weights of the hearts were between 240 and 300 gm in six, and between 300 and 400 gm in five.¹

The myocardium was abnormal to macroscopic examination in all but three cases. These did not differ from the others in the duration of the attack, or in the severity of the blood picture. The heart muscle was described as soft, flabby, pale brown, pale red, yellowish and muddy yellow. Microscopic examination, however, revealed the heart muscle to be normal in all but two of the eleven cases. Of these two, one showed a small patch of fibrosis, and the other, large areas of acute necrosis of the fibers. The importance of the findings in the latter is lessened by the possibility of postmortem changes, in that the section was made twenty-two hours after death.

In four instances, the endocardium, especially on the papillary muscles, was mottled and streaked with yellow, the so-called "tigroid" appearance. The epicardial fat was recorded as moderately increased in four cases, and greatly so in two.

The hearts in this group of eleven necropsies were otherwise normal, save for moderate sclerosis of the coronary arteries in four, of the mitral valves in five, and of the aortic cusps in two instances, respectively. These findings are probably best explained as due to arteriosclerosis. They did not differ from those noted in the hearts of other patients of the same age period but not affected by pernicious anemia.

There were no instances of thrombus formation.

ELECTROCARDIOGRAPHIC FINDINGS

Electrocardiograms were taken in the cases of twenty patients, all of whom were ill with a severe attack of pernicious anemia. In but one case was an arrhythmia present. This case was a clear-cut instance of rheumatic heart disease, auricular fibrillation and mitral stenosis, in addition to pernicious anemia. Examination of the tracings revealed nothing that might be considered of diagnostic value as peculiar to pernicious anemia. Some of the details will be cited.

The heart rate was less than 100 a minute in fifteen cases, while the maximum rate was 122.

The P wave was normal.

The P-R interval varied from 0.12 to 0.15 second in fourteen, in five, it was from 0.16 to 0.18 second, and in one, it measured 0.20 second.

³ Inada, Ido, Hoki, Kaneko and Ito. The Etiology, Mode of Infection and Specific Therapy of Weil's Disease (Spirochaetosis Ictero-haemorrhagica). *J. Exper. Med.* 23: 377 (March) 1916.
⁴ Dawson, B., Hume, W. E. and Bedson, S. P. Infective Jaundice. *Brit. M. J.* 2: 345 (Sept. 15) 1917. Stokes, A., Ryle, J. A. and Tytler, W. H. Weil's Disease (Spirochaetosis Ictero-Haemorrhagica) in the British Army in Flanders. *Lancet* 1: 142 (Jan. 27) 1917.
⁵ Herrman, Charles. Acute Infectious Jaundice (Spirochaetosis Ictero-haemorrhagica). *New York M. J.* 107: 1068 (June 8) 1918.

¹ According to Gray's Anatomy (Spitzka, E. A. New American Edition, Philadelphia, Lea & Febiger, 1913, p. 562) the normal heart varies in weight from 240 to 360 gm.

* From the Heart Laboratory of the Boston City Hospital.

The maximum voltage of the R wave was less than 10^{10-4} volt in ten of the cases, in but four of the remaining ten did it measure more than 13^{10-4} volt.

The T wave exceeded 4.5^{10-4} volt in only two cases. It was upright in Lead 2 in all save the electrocardiogram of the patient with auricular fibrillation, its inversion here was doubtless an effect of digitalis administration.

The Q-R-S complex was normal in appearance and in duration, varying from 0.03 to 0.08 second.

The S-T interval varied from 0.20 to 0.32 second, in half the cases, it was 0.28 second or more. It will be noted that these figures vary from the normal of 0.24 to 0.28 second stated by Buchanan,² but on calculating the Q-R-S-T interval by the method of Fenn,³ it was found that in no case did the actual measurement of this period differ from its calculated length by more than 0.03 second. The probable error when using Fenn's method of calculating this interval is not more than 0.05 second.

The string shadow returned to the iso-electric position after the Q-R-S complex in all but three of the nineteen cases showing normal rhythm, in these three, the failure of the string to return to the base line was but slight, and was present only in Leads 1 and 2. Such a finding was noted in the electrocardiogram of the patient affected by fibrillation of the auricles, but the case must be excluded from this consideration owing to the presence of digitalization.

A rather surprising fact is that in fifteen of the twenty electrocardiograms the excursion of all waves in Lead 3 was small, and in two of the remaining five, the waves were but moderate in height. However, it does not seem safe to consider this observation of diagnostic value, as it is probably explainable by the position of the heart.

The index⁴ of ventricular preponderance was within normal limits in all. It exceeded $+12$ in only three cases, and showed a minus result in only two. In the fifteen remaining cases, the index was positive and less than $+12$.

COMMENT

The most constant and conspicuous change disclosed in the hearts of which the necropsy findings have been analyzed was a varying degree of fatty degeneration of the myocardium. A standard work on pathology⁵ states that this change in the heart muscle may be

found associated with a variety of conditions, such as hypertrophy of the heart myocarditis, pericarditis, coronary disease, nematode leukemia, poisoning with phosphorus and arsenic, diphtheria, scarlet fever and typhoid fever. The same authority is quoted as asserting that small, or even considerable areas of fatty degeneration appear, as a rule, to be of little or no clinical significance, they are at least not inconsistent with perfect health.

It should be emphasized that the fat is not due to a degeneration or breaking down of the muscle fibers, but is brought by the blood stream and deposited in the heart. The term "fatty degeneration" is perhaps a misnomer. The histologic picture of the myocardium was normal in all but two of the cases reported above, and it is not clear that the pernicious anemia was responsible for the changes noted in these two hearts.

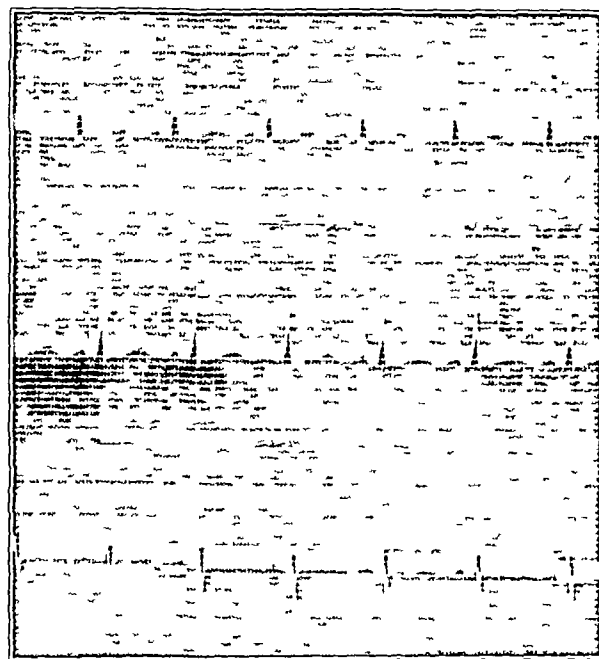
I am not aware of any statements in the literature

as to the functional condition of the heart in pernicious anemia. Wiggers⁶ writes that, after severe hemorrhage and in shock, he has never observed irregularities, nor were the functions of conductivity and contractility impaired in experimental animals. Pernicious anemia, in that in it the anemia is of long duration, is not entirely analogous to the conditions of which Wiggers writes, but so far as the electrocardiograms on the twenty cases I have studied are concerned, nothing abnormal was found.

In an interesting study of pernicious anemia Fahr and Ronzone⁷ found that, in a severe case of this disease, the minute volume of the blood was increased about 250 per cent and the systolic output of the heart was increased in the

same degree. This was brought about largely by an increased blood velocity due to lowered viscosity of the blood and an increased effective cross-section of the vascular tubing. The same observers conclude that the coronary circulation is at the upper limit of the possible, being about as large as that found in severe work.

That the increase in the output of the heart is not accomplished by a lengthening of the duration of ventricular systole would appear from the electrocardiographic studies reported in this paper. It was found that the measurement of the Q-R-S-T interval, which is a very fair guide as to the duration of ventricular contraction, when compared to its calculated length the formula of Fenn³ being used, in no case showed prolongation beyond the limits of error of the method. This tends, therefore, to support the findings of Fahr and Ronzone.



Severe pernicious anemia. The coarser abscissas mark off periods of one-tenth second instead of the more usual one-fifth second.

² Buchanan J. A. A Study of the ST Interval in One Thousand and Twenty Eight Electrocardiograms. *Arch. Int. Med.* 28: 828 (Oct.) 1921.

³ Fenn G. K. Studies in the Variation of the Length of the Q-R-S-T Interval. *Arch. Int. Med.* 29: 441 (April) 1922.

⁴ White P. D. and Bock A. V. *Am. J. M. Sc.* 156: 17 (July) 1918.

⁵ Delafield and Prudden. *A Text Book of Pathology*. Ed. 11 revised by F. C. Wood. New York: William Wood & Co. 1919. p. 611.

⁶ Wigger C. J. *Circulation in Health and Disease*. Philadelphia: Lea and Febiger. 1915.

⁷ Fahr George and Ronzone Ethel. *Circulatory Compensation for Deficient Oxygen Carrying Capacity of the Blood in Severe Anemia*. *Arch. Int. Med.* 29: 331 (March) 1922.

In an editorial⁸ on this work of Fahr and Ronzone, it is pointed out that if such patients (those with severe anemia) are not at rest, and additional effort is demanded of the heart already close to the margin of oxygen sufficiency for its musculature, the latter may readily suffer from anoxemia. It is generally believed that the fatty degeneration of the myocardium is the result of the lack of oxygen in the blood, but, as mentioned above, its clinical significance is not clear. That the tigroid or fatty change, visible especially on the papillary muscles, is to be considered evidence of degeneration of the myocardium would seem to be unwarranted.

It has been pointed out that the heart possesses a remarkable power to protect itself from anoxemia. Starling⁹ states that it can extract almost all the oxygen from blood low in oxygen (i. e., up to 0.5 per cent of the oxygen in the blood). However, since in severe pernicious anemia the heart and blood vessels have compensated by making maximal the rate at which the blood is circulated, it is obvious that any exertion on the part of the patient will readily produce a condition in which the needs of the heart, nervous system and other organs for oxygen cannot be met. In agreement with this in cases of severe pernicious anemia, one observes, following physical exertion, symptoms which force the patient to desist from the activity.

When the patient is given a transfusion of blood, especially if it is large in amount, the viscosity of that in the patient's blood vessels is rapidly raised, and the conditions to which the heart has adjusted itself are disturbed. It might reasonably be supposed that in very severe cases, in which the "fatty degeneration" of the myocardium (if it does impair the heart) is extensive, the heart might have difficulty in propelling onward the more viscid fluid.

Such considerations lend the chief support to the belief that embarrassment of the heart may account for untoward results after a blood transfusion. That the heart is upset by a transfusion is probably more or less theoretical, for evidence of cardiac embarrassment is not obtained by the blood service of the Boston City Hospital, where a large number of blood transfusions have been given to patients affected with pernicious anemia, often of a severe type. Various reactions occur, but in them the heart has played little if any part. The amount of blood infused is kept down by the limitations of the donor, more than 500 c.c. is seldom given.

The upset in the patient referred to in the beginning of this paper was probably due to one of the reactions associated with blood transfusions and not primarily cardiac in origin, the discussion of which is beyond the scope of this paper.

SUMMARY AND CONCLUSIONS

The postmortem findings in eleven cases of pernicious anemia have been analyzed. The most constant finding was "fatty degeneration" of the myocardium. Thrombi were not found.

Electrocardiograms were taken from twenty patients. No abnormalities of diagnostic significance were found.

The Q-R-S-T interval was of normal duration. This demonstrates that the increased output of the heart, described by Fahr and Ronzone,⁷ is not accomplished by a lengthening of the ventricular systole.

There is ample reason for keeping at complete rest a patient who is ill with a severe attack of pernicious anemia.

The fat noted in "fatty degeneration" is brought to the heart by the blood, in accordance with a normal physiologic process, and evidence is wanting that the efficiency of the myocardium is impaired thereby.

Untoward reactions that sometimes follow transfusions of blood in cases of pernicious anemia are not primarily cardiac in origin.

270 Commonwealth Avenue

CHRONIC PULMONARY MILIARY TUBERCULOSIS *

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The pulmonary form of acute miliary tuberculosis is admittedly the most rapidly fatal of all types of phthisical lesions. Its diagnosis does not as a rule present many difficulties because the marked prostration, cyanosis and dyspnea, which are apparently out of all proportion to the scant signs in the chest, constitute a veritable diagnostic triad. The roentgen-ray findings in such cases may at first be inconclusive, but, before long, the appearance of the characteristic diffuse dissemination of the miliary tubercles dispels any doubt as to the true nature of the process.

A form of chronic pulmonary tuberculosis is not infrequently observed in which the miliary tubercles appearing in large numbers is an important element in the lesion. These may be confined to the upper lobes, but are most commonly found in the lower lobes. It is only rarely that one finds a chronic case in which the miliary tubercles are diffusely and uniformly scattered throughout both lungs. These cases of phthisis pulmonalis, when they are presented for treatment, show clinical features and pursue a course which are at great variance with the ordinary acute type of this affection. They are more amenable to treatment, and they are subject to few exacerbations of activity. Furthermore, serial roentgenographic examinations of such cases may disclose not only a clearing of the collateral inflammation around the tubercles but also definite evidence of fibrosis and partial calcification of the tubercles themselves, and what is perhaps still more striking, there may occur apparent resolution in areas previously extensively involved.

The paucity of literature and the failure of standard textbooks on the subject to treat of such cases prompts the report of those which came under observation and which may possibly be designated as cases of chronic pulmonary miliary tuberculosis.

REPORT OF CASES

CASE 1.—A Russian clerk, aged 20, was admitted to the Bedford Sanatorium in October, 1921. His mother and two sisters died of a rapidly progressing tuberculous lung trouble. Though subject to frequent and protracted colds for eight years he, nevertheless, led a normal life and was not hindered from partaking in the usual sports. July 11, 1921, he was suddenly seized with a severe attack of hemoptysis followed by fever ranging from 101 to 103 F., night sweats,

⁸ The Circulatory Compensation in Severe Anemias editorial J. A. M. A. 75: 1460 (May 13) 1922.
⁹ Starling F. H. Mechanisme de compensation de cœur Presse med. 60: 641 (July 29) 1922.

* From the Bedford Sanatorium for Incipient Tuberculosis Dr. Maurice Fishberg, chief of service.

productive cough and pain in the chest. He remained in bed for five weeks, and although the constitutional symptoms abated to a large extent, he complained on admission of a dry, hacking cough, loss of weight and strength, and marked dyspnea on slight exertion.

Physical exploration of the chest on admission disclosed an extensive lesion in the upper lobe of the right lung with suggestion of cavitation in the apical field, as well as thickened pleura at the right base. Roentgenologic examination at the same time disclosed definite evidence of miliary infiltration throughout both lungs with probable cavitation at the right apex (Fig 1). Examination of the sputum was repeatedly positive, the Wassermann test and examination of the urine were repeatedly negative. The blood pressure was 105 systolic and 65 diastolic.

On account of the dyspnea and distressing cough the patient was kept in bed, and, although his temperature rarely rose above normal, the prognosis was considered unfavorable. However, after a protracted stay in bed there occurred a most remarkable improvement in his general condition. The cough became less distressing, dyspnea practically disappeared, he gained in weight and strength, expectoration gradually diminished, and tubercle bacilli could no longer be found in the sputum. Notwithstanding this marked improvement, physical findings in the chest remained practically unchanged so far as the right lung was concerned, while numerous moist rales were now discovered in the midportion of the left lung, radiating from the hilum region to the periphery. At the same time, careful examination of the serial roentgenograms in this case disclosed phenomena that are both unusual and intensely interesting.

Figure 1, reproduced from a roentgenogram taken on admission, shows extensive dissemination of miliary tubercles throughout both lung fields. The tubercles appear fairly uniform in size, and their hazy outline is suggestive of collateral inflammation. The tendency to conglomeration in the right basal field is also to be noted. In a plate taken two and a half months later there is definite evidence of clearing



Fig 1 (Case 1)—Extensive dissemination of miliary tubercles throughout both lung fields; they are of uniform size and distribution and tend to conglomerate in the right basal field.

of the collateral inflammation so that the tubercles appear more discrete. Furthermore, the increased density of the tubercles as well as their tendency to arrange themselves in linear formation, as it were, are strongly suggestive of fibrosis. This evidence of fibrosis is particularly striking in the right basal field where, instead of the conglomerate

tubercles seen in the first plate, there now appear dense, rosy radiations from the hilum region.

Still further evidence of clearing and fibrosis as well as apparent disappearance of some of the shadows noted in the earlier plates was shown in another plate taken eight months after admission. But the changes noted in Figure 2, taken



Fig 2 (Case 1)—Appearance one year later: marked clearing and fibrosis; disappearance of most of the miliary tubercles seen earlier.

one year after admission, are the most remarkable. Here the extensive dissemination of the miliary tubercles throughout both lung fields, which is so apparent in Figure 1, can no longer be seen. Instead, there is marked hilum fibrosis with increased lung markings throughout, and only questionable evidence of infiltration in the upper lobes can be noted.

The striking features of this series of roentgenograms are the marked clearing and fibrosis, and particularly the evidence of resolution, which they apparently show to have occurred in areas previously the seat of extensive miliary tubercularization.

CASE 2—A woman, aged 30, English, upholsterer, whose family and previous history were irrelevant, was admitted in November, 1922, complaining of cough, dyspnea and malaise. In the winter of 1916 she began to suffer from "nervous dyspepsia." However, she got on quite well until the early part of November 1918, when she had a sudden attack of moderately severe hemoptysis. This was followed by marked constitutional symptoms including fever of from 101 to 102, severe dyspnea and general prostration confining her to bed for more than four weeks. Shortly afterward she was admitted to the Densewood Sanatorium, England, where after a stay of three months, her general condition improved so that she was discharged with the disease arrested.

On her arrival in this country, in July 1921, cough and expectoration recurred and became progressively worse. With this she began to lose weight and strength rapidly and experienced persistent afternoon rise of temperature, as well as night sweats, pains in the chest and dyspnea on slight exertion.

Physical examination of the chest on admission disclosed bilateral upper lobe infiltration with cavitation in the right apical field while roentgenologic examination (Fig 3) disclosed miliary infiltration throughout both lungs, more extensive in the upper lobes and especially marked on the right side. The sputum was consistently positive, the urine and Wassermann tests were negative, the blood pressure was 115 systolic and 70 diastolic.

The patient exhibited mild constitutional symptoms of toxemia during the first two weeks of her stay at the sana-

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TUMORS OF THE BREAST

A STUDY OF TWO HUNDRED AND FIFTY-FIVE
CASES

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We have collected in our clinic for the eleven years ending Jan 1, 1922, 255 histories of breast lesions

In 1910 no benign tumors were operated on, in 1921, 50 per cent of the breast tumors removed were non-malignant. This is a striking illustration of what education has done

Many women apply for examination who have no lesion at all. This is due to improper palpation by the patient and sometimes by the examiner. Breast tissue, when picked up by the hand, gives an erroneous feel of a tumor, but when the breast is palpated by the tips of the extended fingers, it flattens out over the chest wall, and a lump can then offer definite resistance

The average age of breast patients was 42.3 years. The youngest patient was a boy, aged 12, with a sarcoma of the left breast. A tumor had been in existence nine years, and involved the whole breast. There was metastasis in the mediastinum, as disclosed by the roentgen ray, and palpable secondary growths in the supraclavicular and infraclavicular glands. The case was inoperable. The oldest patient was a widow, aged 77, this case also was inoperable

There were only ten males, and their average age was 41.2 years. The youngest patient was 12, the oldest, 59. The latter presented an enormous lipoma of the left breast which was first noticed eight years before. The tumor was about 6 inches (15 cm) in diameter, and produced no pain except from its weight. The largest number of male patients came in the sixth decade

The proportion of married women to single women was about four to one, which is the normal ratio

Thirty-nine per cent stated that they had had no injury or irritation, while 61 per cent said that the affected breast had been subject to acute or chronic traumatism which might have accounted for the new growth

The family history was positive for cancer in 29 per cent, and negative in 71 per cent of the patients

Table 1 will illustrate the various types of tumors found in this series

There were 126 cases of malignancy, or 49.4 per cent of all the patients, thus distributed: carcinoma, 120 cases, sarcoma, three cases, epithelioma, one case, malignant cysts, two cases

The average age in the malignant cases was 49.2 years, which is about seven years more than the average age for the entire group including both types of disease. The youngest patient with carcinoma was a married woman, aged 27, with a small tumor about an inch (2.5 cm) in diameter in the upper and inner quadrant of the right breast. It had been in existence six months. The tumor was apparently not growing, and was symptomless. The patient was treated by excision of the tumor, followed by roentgen-ray exposures. This patient is at present well, five years after the excision. Thus, from our study it is safe to say that a tumor in the breast of a woman under 27 is nonmalignant. If the lump occurs in a woman under 20 and is not growing, it is the only exception to immediate operation, but should be kept under competent and regular observation

Nine of these patients with a condition diagnosed recurrent carcinoma had an average age of 44.1 years, five years below the average of the primary cases. This bears out the observation that the younger the patients having cancer, the harder they are to cure and the more likely it is to recur

The malignant group included four males and 122 females. All three sarcomas occurred in males, and the fourth male was a physician with carcinoma of the right breast

The incidence of cancer was about equally divided between the two breasts. In only one case were the two breasts involved simultaneously. In one third of the malignant cases there was a family history of cancer, and in two thirds there had never been a case of cancer in the family. This is fair evidence that heredity plays little part in the etiology of cancer

The average duration of the malignant tumors before operation was thirty-three months, the shortest period of time being one week, and the longest forty-two years. The next longest was thirty years. Excluding these two unusually long cases, the average preoperative duration was twenty-six and one-half months. The average duration of the recurrent carcinomas before the original operation was forty-two months, which is about fifteen and one half months longer than for the primary cases. The shortest duration was eight weeks, and the longest twelve years

One hundred and three patients were operated on for various types of malignancy. In nineteen others or about one in five cases that came under our observation the condition was considered inoperable. Three of these were recurrent. Three others were operated on elsewhere and came to us for irradiation. In one case the

type of treatment was not recorded in the history. In 20 per cent there was no palpable metastasis, in 60 per cent there was axillary metastasis only, in 20 per cent there was axillary and other metastasis as well.

There were 108 operations done on 103 patients, of which eighty-seven were complete operations (routine axillary dissection). Five of these patients had recurrence in the opposite breast, and a radical operation was performed on the second breast, making a total of 108 operations. Of these five patients, one died in the hospital from cerebral embolus, two died within a year after the second operation, one could not be traced, and one remains well at the present time, fourteen months after the second operation.

Five amputations were done in very early cases in which there were no evidences of malignancy or of metastasis. There were no recurrences. Three others

TABLE 1—TYPES OF TUMORS

	Number
Adenocarcinoma	83
Recurrent carcinoma	9
Scirrhous carcinoma	18
Encephaloid carcinoma	1
Medullary carcinoma	5
Mucous carcinoma	1
Large cell carcinoma	1
Beginning carcinoma	2
Precancerous	1
Epithelioma	3
Sarcoma	1
Recurrent sarcoma	1
Papillomatous cyst	1
Blue dome cyst	11
Malignant cyst	2
Chronic cystic mastitis	19
Acute mastitis	2
Suppurative mastitis	2
Fibro-adenoma	28
Adenoma	9
Fibroma	10
Neuroma	1
Lipoma	2
Scleroderma	1
Dermoid	1
Galactocele	6
Tuberculosis	2
Wart	1
Glandular enlargement	1
Bleeding from nipple	6
No tumor	5
Abscess	4
Intracanalicular fibroma	1
Intracanalicular fibro-adenoma	5
Intracanalicular myxofibroma	5
Intracanalicular myxo-adenofibroma	1
Intracanalicular papilloma	2
Chancre	1
Total	255

were done merely as a palliative measure, two of these three being recurrent cases. Three excisions were also performed in very early cases. The remaining three were palliative. Including nine radical amputations of the breast for benign lesions and five done for recurrences in the opposite breast, in the malignant cases, there were 101 complete operations. In two instances the pectoral muscles were not removed. In two instances the wound could not be closed and had to be treated with skin grafts. In two other instances the growth was ulcerated and infected to such an extent that the actual cautery was used for purposes of sterilization and excision. Both of these patients died within two years after the operation.

There were 129 benign lesions of the breast. There were eleven instances of blue dome cysts and one papillomatous cyst. Chronic cystic mastitis occurred nineteen times, acute mastitis twice and suppurative mastitis twice. The cystic process is most frequent at or about the menopause and gives a nodular or 'cobblestone' feeling, caused by the fibrous tissue that sur-

rounds the cysts. There were four abscesses, or 3.1 per cent of the benign lesions. There were two cases of primary tuberculosis of the breast, or 1.5 per cent of the benign group. These presented chronic abscesses and multiple sinuses. There were fourteen intracanalicular growths, including two papillomas. Dermoid cyst of the breast occurred once. There was one case of chancre of the breast. The chancre developed near the nipple of the right breast in a married woman, aged 24. This mother had employed a colored woman to look after the child, who was 10 months old. The colored woman infected the child with syphilis, the baby developing a chancre of the lip. The mother allowed the child to nurse, and in this way became infected.

The patients with innocent breast lesions came for treatment at an average age of 36.1 years, which is thirteen years younger than the average among the malignant series. The youngest patient was a youth of 16 with mastitis of the left breast of one year's duration. No operation was performed in these cases. The oldest patient was a married woman, aged 60, who had had an intracanalicular fibro-adenoma of the left breast for about eight years, which was excised.

The average duration of the lesions was fourteen months, as against twenty-six and one-half months for malignant growths. Who can say how many of these benign lesions at fourteen months would have been malignant at twelve and one-half months later?

In the benign group the family history was positive for cancer in 73.8 per cent of the cases, and negative in 26.2 per cent. This negatively proves that heredity plays little or no part in the occurrence of cancer. It is interpreted to mean that the fact that nearly three-fourths of these patients knew of the occurrence and believed in heredity caused them to apply earlier for advice. Only about one-third of the cancer patients knew of any heredity, and they delayed operation more than twice as long as the patients with benign growths.

Practically all women over 25 with single lumps in the breast are advised to have them removed. The frank, movable adenomas are generally removed under a local anesthetic. They present a typical appearance on section, and are encapsulated. The blue-dome cyst is easily recognized and always benign. These two groups fortunately comprise the majority of innocent tumors.

Nearly all nonencapsulated tumors are malignant, and if all such are submitted to the radical operation, Bloodgood estimates that only 15 per cent will be found noncancerous.

Operations were performed on eighty-nine patients with benign lesions. In two patients, tumors were removed from both breasts at one sitting, and two other patients returned later with an innocent growth in the opposite breast, which was removed in a second operation. In all, then, there were ninety-three operations performed.

The radical operation for the removal of the breast was performed nine times for these benign pathologic conditions: chronic cystic mastitis, four times; fibroma (large as child's head), once; intracanalicular fibro-adenoma, once; tuberculosis, once; suppurative mastitis, once; and cyst (papillomatous), once.

The remaining forty patients were not operated on. The clinical diagnoses in the benign cases were: chronic cystic mastitis, 6; intracanalicular papilloma, 2; fibro-adenoma, 14; acute mastitis, 2; abscess, 1; chancre, 1; glandular enlargement, 1; no pathologic condition, 5;

dermoid, 1, scleroderma, 1, and bleeding from the nipples, 6

In the six cases of bleeding nipples, operation was not performed because there was no tumor and no ulceration, but these patients were kept under surveillance until the discharge ceased with or without treatment

On the other hand, a number of cases of tumor, symptomless except for a bloody discharge from the nipple, proved to be cancer, and operation was performed

The clinical diagnosis of the malignant or nonmalignant nature of the breast tumor is not always possible in the early cases. In this series there were thirteen patients with all the clinical signs of benign tumor. In each of these cases the tumor was excised under local anesthesia for microscopic examination, and proved to be cancer. Eleven of these tumors were excised in our clinic, and two operated on elsewhere and referred to us for the radical operation. All of them had the radical amputation performed except one patient, who refused to submit to any further surgical effort. The longest period of time elapsing between the local excision and the radical operation was five and one-half months, and the shortest was one day. Only nine patients submitted to radical surgery on the day set by the surgeon, which was, on an average, four days after the local excision. Of these thirteen patients, two are now dead. One patient lived three years following her Halstead operation, and died of a recurrence. The other survived two years, and died of cancer of the stomach. Eleven patients are now living and well. Four of them have survived one year, two have remained well for two years, two for four years, one for six years, one for nine years, and one for ten years.

The two-stage operation is not advised. Immediate radical removal after exploratory incision confirms the malignant nature of the growth and is undoubtedly the ideal method. At the present time a frozen section is done on all questionable neoplasms, and a report made within two or three minutes as to the malignant or nonmalignant nature of the tumor. If malignant, the radical operation is proceeded with at once.

When the surgeon cannot be certain, and a trained pathologist is not immediately available, our experience shows that wide excision of the growth, followed by microscopic study and early secondary operation, is not as dangerous as we have been led to believe.

The patients who presented unmistakable signs clinically of cancer are too advanced for an assured expectancy of permanent cure. By the external or clinical signs of malignant tumors is meant such evidence as skin involvement manifested by bulging and dimpling of the skin, retraction of the nipple, fixing of the skin over the tumor, a "pigskin" appearance and, in the more pronounced cases, breaking down and ulceration. Immobilization of the tumor, an unusual degree of firmness to the touch, and nonencapsulation associated with immobilization are clinical evidences of malignancy. Not only must the diagnosis be made, but the operation must be performed before such manifestations appear in order to bring about a permanent cure. To reach a conclusion while the tumor is most amenable to surgery, microscopic evidence alone is of diagnostic importance. It has been shown that malignancy exists in tumors that are small, encapsulated and movable, in tumors without any of the external clinical evidences of malignancy.

The laboratory diagnosis was incorrect in four cases in the entire group. Three malignant cases were reported benign, and a benign tumor in a lactating breast was reported malignant.

The malignant series of cases constituted a group in which the pathologic changes were very far advanced. A great many of these cases were well nigh desperate, and in some, perhaps, operation should not have been performed. A frail, wizened woman with a withered, malignant breast firmly fixed to the chest wall will live longer at that stage if not operated on. A study of the group as a whole brings this out in the following manner:

Nineteen were inoperable

Four others were recurrent

Ten were ulcerating

Two patients had local excision elsewhere and came to the clinic for radical operation after undue delay.

Two patients who had undergone local excision in the clinic wilfully and knowingly delayed the radical operation in one instance one month and in the other five and one half months.

Three cases were in lactating breasts, which decreases the chances for cure almost to the vanishing point.

Two cases occurred in diabetics

Two patients had edema of the arm from large metastatic growths in the axilla.

There were no deaths among the eighty-nine patients operated on for benign conditions, and no known recurrences among the 129 patients of the nonmalignant

TABLE 2—END RESULTS IN CASES CONSIDERED
SURGICAL AND IN WHICH OPERATION
WAS PERFORMED

	Per Cent
1910-1916—5 to 11 year cures	45.7
1917—4 year cures	50
1918—3 year cures	8.3
1919—2 year cures	61.5
1920—1 year cures	64.2

group. There were, however, five deaths in the hospital following operations for malignancy, a primary mortality of 4.2 per cent. One patient died of diabetic coma on the fourth day, after two weeks of the Allen treatment had rendered the urine sugar-free. One died of infection on the fifth day, one of pneumonia on the sixth day, and two of embolus, one on the second day and one at the end of two weeks. Thus, only one patient died of a preventable surgical complication which would make the actual surgical mortality 0.8 per cent.

Of the 126 patients with malignant disease 111 were traced. Of the total number there are living 47.7 per cent. This, however, includes some of the inoperable cases of recent date. Of the patients operated on and living, three are known to have recurrences.

Patients who were operated on and who died, lived on an average a little more than twenty months.

Patients whose conditions were considered inoperable lived, on an average nine months after their consultation. Two of these patients had palliative operations and an average postoperative life of only two months or an existence seven months shorter than those who were left alone. The entire course of the disease from beginning to death, in the untreated cases, covered an average period of twenty-five and one half months which is shorter than the preoperative duration given by those patients treated surgically, thus showing the relative virulence or the rapidly growing inoperable tumors.

gave a definite period when the picture changed dyspepsia became continuous, there was loss of weight, or some other abnormality was observed. The lesson is, persistent indigestion past middle life is suspicious—the slogan the American Society for Control of Cancer is trying to spread broadcast. Many mild indigestions will have to be thoroughly analyzed to find a few early cases. For the last two years, all the hospitals in Detroit have held special free cancer diagnosis clinics during national cancer week. In 1921, twenty-six gastric cases were examined, and two early cancers found. In 1922, a much larger number were examined, but no stomach cancers found. This may represent the average rewards of effort, but how else will carcinoma of the stomach be detected during the first three months? In six months the disease is hopeless in a large majority of cases.

The indigestion was often mild, and was more continuous and associated more frequently with flatulence and food aversion than is the chronic ulcer dyspepsia, and there was rapid loss of weight. There were a sufficiently large number of cases, however, in which the history was indistinguishable from ulcer to enjoin a heavy responsibility on the continued medicinal treatment of ulcer in middle life.

Every textbook describes carcinoma of the stomach as associated with persistent vomiting of food eaten one, two or three days before, of lactic acid, coffee grounds,

descending colon is reached that obstruction is prominent, for in this region the contents are becoming solid. Here the attacks of obstipation are intermittent, often associated with diarrhea (fermentation or putrefaction). The first portion of the bowel to show classical gradually increasing obstruction is the sigmoid. Gross bleeding first makes its appearance with tumors of the rectosigmoid junction. Thus, the symptoms of cancer of the colon are not obstruction, vomiting and blood in the stools. On the right side they are vague cramps and distention. On the left, gradually increasing obstruction. Only near the rectum is hemorrhage prominent. Again the early signs do not correspond to the classical textbook cancer.

RECTUM

The average duration of symptoms in cancer of the rectum before operation was eight months, a shorter period than in colon, longer than in stomach cancer. Radical operation was possible in sixteen cases, or 26 per cent, and three quarters of these patients, or 20 per cent of the total—much higher than in cancer of the colon—recovered. These figures are a bit obscured, however, by the fact that operative indications apparently differed, and the reliance placed on radium deferred where some operators would do extensive resections, others believed in more limited excision and heavy radium therapy.

TABLE 1—OPERATIVE RESULTS ON APPLICANTS FOR CURE OF CANCER AT HARPER HOSPITAL

Organ	Year	Number of Applicants	Average Duration of Symptoms Before Operation Months	Per Cent Operable	Radical Operations			Applicants Recovering from Operation per Cent	Cures 5 Years or More per Cent	Estimated Total Cures of Applicants per Cent
					Number	Deaths	Recoveries			
Stomach	1918 to June 1922	82	6.7	16	13	8	5	6.1		1.5
Colon	1918-21	47	11.5	28	13	6	7	15.0	40	6.0
Rectum	1918-21	63	8.0	26	16	4	12	19.0	30	5.7

* This refers to the number of operation recoveries for each hundred applicants

etc. In only 15 per cent of the cases was vomiting noted as a prominent symptom, and many of these had long ulcer-like histories. Long before obstruction develops, the disease is incurable. Rarely was there coffee ground vomitus, bleeding was not a prominent symptom. Medical education must stress the early symptoms, even though vague, rather than the later ones, if we intend to operate on stomach cancer early.

COLON

The average duration of symptoms in cancer of the colon before operation was eleven and one-half months. Of the total number, thirteen, or 28 per cent, were available for radical operation, and only seven patients recovered. That is, in 15 per cent of the total number of cases there was a chance for cure (Table 1). On the supposition that in 40 per cent of colon resections the patients were alive after five years, we may estimate that 9.2 per cent of the patients presenting themselves at the hospital with cancer of the colon may have been cured.

The histories in this group were not detailed enough to classify symptoms. Homans,* in a careful analysis of the symptoms of cancer of the colon, notes that the contents of the proximal half of the intestine (cecum, ascending colon, half of the transverse colon) are fluid. Here, early symptoms are intermittent appendicitis-like cramps, and gaseous distention. It is only when the

Mayo Clinic figures show 30 per cent of patients who have had rectal resection alive after five years, therefore, 6 per cent of our patients may have been cured.

Fourteen per cent of the cases had a note in the history that hemorrhoids had been diagnosed, often treatment (such as salves or hemorrhoidectomy) had been previously given. Hemorrhoids are a frequent complication of cancer of the rectum, because of the increased vascularity. The impression gained by a perusal of the charts was that the early recognition of cancer of the rectum depends more on the attending physician than on the patient. It seemed that people were more likely to consult a physician for bleeding from the rectum than for constipation, dyspepsia or similar conditions. There were more patients who had noticed symptoms only a short while than in either of the other groups, and the larger number of early operations is perhaps explained by the fact that some of these patients had the proper advice. Routine high rectal examination will probably cure more cancer of the rectum than will popular propaganda.

BREAST

Because most breast cancers can be available for operation, estimates such as given for the stomach, colon or rectum cannot be stated. However a rough approximation can be given. When the axilla is free from disease the prognosis has been stated to be 50 per cent of cures (Table 2). When the axilla is involved,

5 Homans, J. Symptomatology of Carcinoma of the Large Intestine. S. Clinics N. America 1: 739 (June) 1921.

presented figures show that the chance of cure is from 10 to 25 per cent. Of the patients coming to Harper Hospital from 1914 to 1920, 80 per cent had metastases in the axilla, in only 20 per cent was the axilla clinically free. That is, in four fifths of the patients, the chance of cure was 25 per cent, in one fifth it was 75 per cent (Table 2).

How early the axillary glands are involved, it is difficult to say. In twelve months they are uniformly infected.

It is easier to get breast cancer early than internal carcinoma, and it is certain that women are coming sooner for operation in this form than they did a few years ago. In 1914, the average duration of the tumor before operation was sixteen and one-half months. In 1920, it was ten months (Table 2).

Other figures are striking in this regard, and constitute an ardent testimonial to the efficacy of popular education. At Johns Hopkins⁹ during thirty years, the percentage of benign lesions of the breast had changed from 32 to 59 per cent of the total tumors of the breast,

months). Our problem, therefore, is proper therapy certainly before six months, preferably before three months.

POPULAR EDUCATION

It is not the purpose here to discuss the means of popular propaganda, but two items in the experience of the free hospital clinics held in Detroit during cancer week in 1921 and 1922 may be briefly detailed. "Come early, in the early treatment lies the hope of cure" must be given to vast audiences, and must be periodically repeated. Interest in the subject must often be created, and it is not always easy to present it properly, but these two difficulties are diminishing as the ball of publicity gains impetus in its rolling.

More stress must be laid on the symptoms of the commoner cancers than on the rarer forms. Thus, cancer of the stomach comprises more than one third of all malignancies, cancer of the skin, only 3 per cent. To instruct an audience to beware of rodent ulcers, irritated papules, and the like, will not make for as much control as instructing them to beware of suddenly

TABLE 2—AVERAGE DURATION OF TUMOR BEFORE OPERATION AND PROGNOSIS IN CANCER OF THE BREAST

Duration Harper Hospital				Prognosis	
Year	Months			Axilla Uninvolved	Axilla Involved
1914	16.5	Axilla involved 80% Axilla uninvolved 20%	Johns Hopkins Hospital Rodman Hospital Crisle Hospital Massachusetts General Hospital	80% cured (1 yr.)	0% cured
1915	13.4			80% cured (1 yrs.)	2.7% cured
1916	17.0			80% cured (1 yrs.)	12.14% cured
1917	15.0				
1918	14.0				
1919	13.0				
1920	10.0				

TABLE 3—PERCENTAGE OF CANCER DISCOVERED AT DETROIT FREE DIAGNOSIS CLINICS IN RESPONSE TO PUBLICITY (CANCER WEEK 1922)

Hospital	Harper	Ford	Grace	St. Mary's	Providence	Receiving	Highland Park	Deaconess	Total	Pittsburgh Clinic
Total cases	98	78	27	38	27	28	12	13	321	122
Cancer cases	11	8	1	4	4	2	0	1	31*	12
Percent cancer	11.2	10.3	4	10.5	15	7.1	0	8	9.6	10

* Cancer of skin eleven, cancer of breast ten, cancer of uterus seven, cancer of mouth three.

and the progression has been steadily accompanied by a shortening in the duration of the disease.

The first operative procedure in acute appendicitis was a stab into the edematous fluctuating abdominal wall just as the pulse was beginning to flicker and respirations were becoming labored. Cures were few, and the operation was in disrepute. That is where these figures place the surgical cure of gastric carcinoma. Many good internists today doubt that gastric cancer is ever cured with enough frequency to be called a possible outcome in a given case. The next stage in appendicitis therapy was incision into the edematous wall before fluctuation developed. Cancers of the rectum and colon may be said to stand in about this stage—from 20 to 15 per cent, respectively, surviving operation, and from 9 to 6 per cent perhaps being cured. In breast cancer, we are perhaps operating in the stage of early abscess formation (to continue the appendicitis simile). The operation is here done from the fifth to the twelfth day, and our patients have some reasonable chance of cure. The clean early appendectomy, in which no worry is given to the prognosis, is, in this series nowhere in sight. It might be noted that most cancers come for operation between the sixth and twelfth month (stomach six and one-half months, colon, eleven and one-half months, rectum, eight

appearing indigestion). Furthermore, it is easier to deliver the message for external cancers than for internal, just as it is easier to diagnose external than internal cancers. This was noted in the results of the free cancer diagnosis clinics held during cancer week (Table 3). Twenty-eight per cent of persons applying for examination in 1921, and 22 per cent in 1922, came because the publicity made them suspicious of skin lesions—respectively, nine and seven times the normal ratio of incidence. Seventeen and 27 per cent were suspicious of stomach cancers—one half and two thirds, respectively, of the normal ratio of incidence. Lesions of the colon and rectum show figures similar to those of the stomach, and breast and pelvic lesions occupy a middle position between external and internal growths.

The 321 patients of 1922 clinics were examined in eight different hospitals. Of these patients 9.6 per cent were found to have cancer. It is curious to note how closely different groups of examiners found the same proportion of positive results. Thus, ninety-eight cases in one hospital showed eleven cancers, seventy-eight cases in another showed eight cancers, thirteen cases showed one cancer. In Pittsburgh, in a similar clinic, of 121 patients examined, twelve were found to have cancers, as indicated in the accompanying chart.

7 The Pittsburgh figures I have through the courtesy of Dr. J. I. Rush of the American Society for the Control of Cancer.

Perhaps further data will establish the fact that 10 per cent of persons applying for examination in response to such publicity have cancer. Another 12.4 per cent of these persons in Detroit had precancerous lesions (such as oral irritation, leukoplakia, benign tumors and pigmented mole), making the total cancer and precancerous conditions 22 per cent. In Pittsburgh, 13 per cent had precancerous lesions, a total of 23 per cent.

CONCLUSIONS

1 The cancer problem of a community should be stated in terms of the lateness of adequate treatment, and results of treatment in that particular community.

2 When thus stated, in the group of cases analyzed, probable cures did not exceed 15 per cent of total hospital admissions for stomach cancer, 6 per cent for colon, and 6 per cent for rectum. In 80 per cent of breast cases there was already involvement of the axilla, with the probable prognosis of from 15 to 25 per cent of cures.

3 Early rather than classical symptoms must be stressed in considering gastro-intestinal cancer, if cases are to be adequately treated earlier.

Mouth	4	██████			
	9	██████			
	6	██████			
Stomach	38	████████████████████			
	17	████████████████████			
	27	████████████████████			
Colon, Rectum	12	████████████████████			
	5	████████████████████			
	1	████████████████████			
Pelvic	14	████████████████████			
	11	████████████████████			
	9	████████████████████			
Skin	3	██████			
	28	████████████████████			
	22	████████████████████			
Breast	19	████████████████████			
	10	████████████████████			
	13	████████████████████			

Comparison of normal incidence of cancer with response to publicity black percentage of incidence of cancer of different body organs (U. S. mortality statistics) shaded percentage of distribution of lesions (not necessarily cancer) in patients brought to Detroit hospitals by cancer week diagonal shading 1921 162 patients cross hatching 1922 321 patients

4 As it is more difficult to diagnose gastro-intestinal cancer, it is likewise more difficult for the public to respond to warnings for gastro-intestinal cancer than for external growths.

5 Ten per cent of the patients examined at several different clinics in response to cancer week publicity had cancer. Another 12 or 13 per cent had precancerous lesions.

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Normal Development of the Child—The way the child functions probably is one of the most important ways in which to determine whether a child is really normal or not. That is a field in which the nurse has peculiar opportunities, perhaps far more in her public health work than has the physician. By the general appearance of the child, the brightness of his eyes, the redness of his lips, the plumpness and rosininess of his cheeks, the way he stands, the way he walks, runs and plays, how soon he is fatigued, how he sleeps, how he eats, how he functions throughout the day and night, these are all points of observation and also points of fact which have a great bearing on whether a child is really normal or abnormal.—W. P. Lucas, *Hospital Social Service* 7:5 (Jan) 1923

INCIDENCE OF HOOKWORM DISEASE AMONG PERSONS WHO WERE CURED FIVE YEARS AGO*

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This paper reports certain results obtained during a resurvey of an area on the island of Antigua, British West Indies, in which measures for the relief and control of hookworm disease were terminated five years ago. Both the treatment campaign, extending from September, 1915, to June, 1917, and the resurvey, made during April and May, 1922, were conducted under the auspices of the International Health Board of the Rockefeller Foundation. The paper is of interest primarily because it records the results of a careful study of hookworm infection among persons whom microscopic examination had previously shown to be cured of the disease. The findings which it presents are in complete accord with observations made by Smillie¹ under analogous circumstances in Brazil. It demonstrates certain fallacies in campaign procedure, and emphasizes the need for definite measures in order that permanent hookworm control may be attained.

PHYSICAL FEATURES OF THE ISLAND

Antigua is one of the Leeward Islands of the British West Indies. It is located in latitude 17° 5' north and longitude 61° 50' west, thus lying within the tropics. The island is 12 miles long, 9½ miles wide, and 70 miles in circumference. Its area is 108 square miles, or about 69,275 acres. Roughly speaking, there are three geologic areas: the limestone area, comprising the northeastern third of the island, the volcanic area, occupying the southwestern third, and, between the two, a broad, flat area called the Central Plain, which is undoubtedly an old sea bottom. This report deals with the entire southwestern third of the island, including practically all of the volcanic area and about half of the Central Plain. All previous hookworm studies indicated that the infection was heaviest in this section of the island, and it was therefore chosen for the resurvey. Without going into burdensome detail, it may be said that the conditions of soil, rainfall and drainage, as well as the physical characteristics of this region, are more conducive to the spread of hookworm disease than are those of other sections.

WORK OF THE ORIGINAL CAMPAIGN

During the treatment campaign of 1915-1917, 7,477 persons were examined in the area which was later resurveyed. Of these, 2,229, or 29.8 per cent, were found infected with hookworm disease. Of the infected persons, 1,972 were cured, so far as this could be determined by the microscope. The anthelmintic used was thymol, exclusively, the maximum dose given was 40 grams (26 gm.). Each person was treated until no hookworm ova could be found in the stools. The microscopic technique employed consisted of the examination of four fecal smears on 1½ by 3 inch glass slides; two such preparations were examined before and two after, centrifuging. If hookworm ova were found on any of the four slides, the specimen was called negative. At the completion of the control cam-

* The studies and observations on which this paper is based were conducted with the support and under the auspices of the International Health Board of the Rockefeller Foundation.

¹ Smillie, W. G. The Results of Hookworm Disease Prophylaxis in Brazil. *Am. J. Hyg.* 2:77 (Jan) 1922.

paign, all treatment ceased, as no organization was left to carry on the work.

When the treatment campaign was practically finished, the authorities of Antigua built pit latrines throughout the resurveyed area and appointed part-time sanitary inspectors to see that these were properly maintained. No latrines have been constructed since February, 1920, and no organized hookworm-control measures have been in force since June, 1917.

RESURVEY FINDINGS

In April, 1922, a sanitary study of the resurveyed area disclosed certain facts bearing on the hookworm incidence. The region was a rural district, which,

TABLE 1.—INCIDENCE OF HOOKWORM DISEASE IN RELATION TO AGE AND SEX OF THE 1,234 PERSONS REEXAMINED IN 1922

Age Years	Total			Male			Female		
	Exam- ined	Infec- ted	Per centage	Exam- ined	Infec- ted	Per centage	Exam- ined	Infec- ted	Per centage
6 to 18	245	44	18.1	121	28	23.1	122	16	13.1
19 to 40	502	116	23.1	191	51	26.7	312	65	20.8
41 to 60	340	65	19.1	147	21	14.3	193	44	22.8
Over 60	148	37	25.0	70	17	24.3	78	20	25.6

except for domestic gardens, was given over entirely to the raising of sugar cane. The population, which numbered 7,166, was made up entirely of negroes of the agricultural laboring class. The water supply, purely of surface origin, was entirely inadequate and was subject to surface contamination of all sorts, especially pollution with human fecal material. Undoubtedly, it plays a part in the dissemination of hookworm disease. Rural sanitation and hygiene were of a very primitive type. One hundred and forty-one latrines, all badly in need of repair, were found, this was one latrine for every fifty people. Of these latrines, ninety-one were built by government and fifty were the result of private initiative. No latrines were discovered in the fields. Overcrowding and the financial limitations of the health department are other factors disclosed by the sanitary survey which have relation to the incidence of hookworm disease.

During the resurvey, 1,234 (62.6 per cent) of the 1,972 persons cured in 1915-1917 were reexamined for the presence of hookworm ova. Of the remaining 738 persons, 184 were dead, 279 had left the island, 141 lived in places that were inaccessible during the time available, 34 could not be found, 100 refused to submit specimens, and 66 had failed to return their specimen containers when the survey was terminated. In order that the results might be comparable, identically the same method of examining the specimens was followed in 1922 as in 1915-1917.

In 1915-1917, the general mass rate of infection in the resurveyed area was 29.8 per cent. In 1922, 1,234 of the 1,972 persons who had been freed of hookworm in 1915-1917 were reexamined, and 262, or 21.2 per cent, of them were found infected. All the persons examined in 1922, however, were known to have harbored hookworms five years previously, and it was, therefore, thought probable that some of the infection was continued infection rather than reinfection. In view of this fact, a group of 300 persons was examined who were known to have been free from hookworms in 1915-1917. Of these, 16.3 per cent were infected. Thus, although the number of persons examined in these two groups is far from equal, it is perhaps permissible to conclude that at least 4.9 per

cent of the infection found in 1922 among those cured in 1915-1917 is continued infection rather than reinfection. This figure is in keeping with results reported by Darling and Smillie,² who show clearly that it is futile to expect to eradicate all the worms by treatment, and that the microscope is not an infallible index of cure. Of the persons who were cured in 1915-1917, 78.8 per cent showed no evidence of ova in the stools five years later. In view of the sanitary facilities available and living conditions in general, this cannot be said to be an unfavorable result.

REINFECTION IN RELATION TO AGE AND SEX

The infection rate in relation to age and sex among the 1,234 persons reexamined in 1922 is shown in Table 1. No similar data were collected in 1915-1917 so that a comparison cannot be made. It will be noted that no particular age group or sex shows an outstanding tendency to reinfection, the incidence of the disease is fairly evenly distributed throughout all the groups, although girls from 6 to 18 years of age show less tendency to reinfection than other groups. The great reservoir of present infection, in relation to the number examined, seems to lie in the group from 19 to 40 years of age. This is especially noticeable in the male group of this age.

OCCUPATIONAL INCIDENCE OF REINFECTION

Of the 1,234 persons reexamined in 1922, 894 were field laborers, sixty-three worked indoors, chiefly in sugar factories, fifty were housewives, and 227, who were under 18 years of age, were classed as children. The infection rates within these groups are presented in Table 2. Similar data for 1915-1917 are not available for comparison.

The large majority of the persons examined were field workers, and most of those included in the "housewife" and "children" groups spend considerable time in the fields. It is not surprising, therefore, to find the heaviest infection rates within these groups. But soil pollution is extensive, and there is ample possibility of "dooryard" infection for housewives and children. It

TABLE 2.—INCIDENCE OF HOOKWORM DISEASE IN RELATION TO THE OCCUPATION OF 1,234 PERSONS REEXAMINED IN 1922

Occupation	Examined	Infected	
		Number	Per Cent
Field	894	210	23.5
Indoor	63	2	3.2
Housewife	50	11	22.0
Children	227	39	17.2

is interesting to note that only two of the sixty-three persons who were cured in 1915-1917 and have since worked indoors were reinfected.

SHOE-WEARING A PROTECTION AGAINST INFECTION

The data concerning the infection rate in relation to the wearing of shoes show that of 960 persons who did not wear shoes at all, 214 (22.2 per cent) were infected, of 245 who wore shoes part of the time, forty-four (17.9 per cent) were infected, and of twenty-nine who wore shoes constantly, four (13.7 per cent) were infected. As would be expected, the infection rate was higher among persons who did not wear shoes at all.

² Darling, S. T. and Smillie, W. G. Studies on Hookworm Infection in Brazil. Monograph 14. Rockefeller Institute for Medical Research. Feb. 1, 1921.

RELATION BETWEEN INFECTION AND HEMOGLOBIN INDEX

Tallqvist hemoglobin determinations were made by the field men, but as it was not possible to rule out all causes of anemia other than hookworm disease, the hemoglobin must be interpreted only as a very rough index of the intensity of infection. The results of these observations are recorded in Table 3.

Only 1.1 per cent of the infected persons had hemoglobin readings below 60 per cent, and in these cases the low index may have been due to causes other than hookworm disease. It will be seen also that 24.4 per cent of the infected persons had hemoglobin readings

TABLE 3.—HEMOGLOBIN (TALLQVIST) PERCENTAGES IN RELATION TO INFECTION WITH HOOKWORM DISEASE AMONG 1197 OF THE PERSONS RE-EXAMINED IN 1922 *

Hemoglobin per Cent	Number Not Infected	Number Infected	Total Number Infected per Cent
0-9			
10-29			
30-49	4	3	1.1
50-69	229	64	24.4
70-89	559	149	56.9
90-100	143	46	17.6

*Thirty seven of the 1234 persons reexamined refused the hemoglobin test.

between 50 and 69 per cent (no reading was below 60 per cent), but that 229 (23.5 per cent) of the non-infected persons had the same values, and 149, or 56.8 per cent of the infected persons and 559, or 57.5 per cent, of the noninfected persons had hemoglobin readings between 70 and 89 per cent. Of the 251 persons who are known to have been free from hookworm in 1915-1917 and also in 1922, sixty-five, or 25.8 per cent, had hemoglobin readings between 60 and 69 per cent, while 172, or 64.1 per cent, had readings between 70 and 89 per cent. (Four of the 251 persons refused to allow the test.) Forty-six (17.5 per cent) of the infected persons and 143 (14.7 per cent) of the non-infected persons had hemoglobin values above 90 per cent. Thus, it is seen that the degree of anemia in infected persons was no greater than in noninfected persons, which is in keeping with the fact that it was almost impossible to differentiate clinically between infected and noninfected persons. This is undoubtedly explained by the brilliant work of Smillie in Brazil, who found that the infection rate was almost exactly the same after four years of hookworm disease prophylaxis as it was before, but the actual number of hookworms harbored by the treated persons averaged only fourteen, a number too small to cause symptoms. He therefore draws a definite distinction between hookworm infection and hookworm disease, feeling that the disease has been eradicated and that the remaining harmless infection will soon disappear owing to its self-limited nature.

CORRELATION BETWEEN NUMBER OF TREATMENTS RECEIVED AND REINFECTION

In 1915-1917, the only drug used in treatment was "c". The number of treatments necessary before "c" was effected varied from one to seventeen. Table 4 shows the infection rate in 1922 in relation to the number of treatments given the same persons in 1915-1917 before they were pronounced cured. It is interesting to note that, in the case of only three of the persons reexamined in 1922, had hookworm indicated in 1915-1917 by one treatment

of thymol, and none of these were reinfected. In general, as the number of treatments received in 1915-1917 increases, the rate of reinfection in 1922 increases especially up to the eighth treatment. Darling and Smillie² have shown that the microscope is not a reliable index of cure, and that in persons harboring from five to twenty hookworms the ova may not be discovered in the stools. It is highly probable that many of these apparent reinfections, especially after the fifth or sixth treatment in 1915-1917, were continued infections.

INCIDENCE OF PARASITES OTHER THAN HOOKWORM

Table 5 shows the number and percentage of persons who in 1922 were found infected with intestinal parasites other than hookworm. The incidence of parasites in persons who were cured in 1915-1917 is contrasted with the incidence in persons who were not examined and not treated in 1915-1917. These data, however, do not represent an exhaustive search for parasites other than hookworm, but merely record the ova which were found during examination of specimens for hookworm ova. As soon as the latter were found, the specimen was discarded, and no further search was made for other parasites. In general the persons who were treated and cured in 1915-1917 did not, in 1922, show a markedly decreased incidence of intestinal parasites other than hookworm, as compared with persons who were not treated in 1915-1917. The percentage of infection with *Ascaris lumbricoides* was less by 10.3 per cent and with *Trichuris trichiura*, by 7.7 per cent, among those persons who were treated in 1915-1917. In 21.6 per cent of the persons who were cured in 1915-1917, no parasites were discovered in 1922, while 19.7 per cent of the persons who were not previously

TABLE 4.—INFECTION WITH HOOKWORM DISEASE IN 1922 IN RELATION TO THE NUMBER OF TREATMENTS GIVEN IN 1915-1917 BEFORE A CURE WAS OBTAINED

Number of Treatments 1915-1917	Results of Examination of the Same Person in 1922		
	Number Examined	Number Infected	Per Cent Infected
1	3	0	
2	494	41	14.4
3	2	4	14.4
4	1	4	9.0
5	112	33	8.0
6	7	1	0.8
7	4	14	23.4
8	7	1	4.0
9	1		1.0
10	1		41.7
11	1		1.4
12			49.0
13			2.0
14		1	7.0
15			0.0
16	1	1	100.0
17		1	9.0
Not stated		3	23.3

treated had no intestinal parasites in 1922. Five years after treatment for hookworm disease in an inadequately sanitized area very little change had occurred in the parasitic content of the intestines of treated persons.

EFFECT OF SANITATION ON RATE OF INFECTION

During the treatment campaign of 1915-1917 there were no latrines in the re-surveilled area. In 1922 in the same area, there were 141 latrines, and 1900 inhabited houses, so that 7.1 per cent of the homes had latrine accommodations. In 1915-1917 the infection rate was 29.8 per cent, and in 1922 21.2 per cent. In

other words, with an increase of 71 per cent in the latrine accommodations, there was a fall in the infection rate of 87 per cent

Table 6 is a brief summary of information obtained regarding the use of latrines by 1,234 persons who were cured in 1915-1917 and reexamined in 1922. Of these, it will be seen, thirty-three (2.6 per cent) said they used latrines, and four of the thirty-three were infected, 1,201 (97.3 per cent) said they did not use latrines, and 258 were infected. The table also shows that 98.5 per cent of the reinfection occurred among persons who did not use latrines.

The decrease of 8.6 per cent in the hookworm infection rate in 1922 cannot be attributed entirely to the treatment and sanitation work of 1915-1917. As already shown, 97.3 per cent of the people examined did not use latrines, so it does not seem that sanitation could be responsible for much of the decrease. For ten months immediately preceding the resurvey of 1922, the average monthly rainfall in the resurveyed area was 31.2 per cent less than it was during a similar period immediately preceding the treatment campaign of 1915-1917. Also, during the 1922 observations, the monthly rainfall was 64.9 per cent less than it was during the 1915-1917 observations. Diminished rainfall and resultant surface conditions nonconducive to the development of hookworm larvae may account for much of the diminished infection rate in 1922. Approximately one-sixth as many persons were examined in 1922 as in 1915-1917, a fact which must also be considered in explaining the lower infection rate found in 1922. For all practical purposes, infection with intestinal parasites among the persons who were cured of hookworm disease five years ago may be said to have reverted to the same incidence existing before any treatments were given.

MEASURES NECESSARY FOR PERMANENT HOOKWORM CONTROL

The foregoing observations emphasize the obvious requirements for permanent results in hookworm control. It is evident that no treatment work should be

TABLE 5.—PARASITES OTHER THAN HOOKWORM WHICH WERE FOUND IN PERSONS REEXAMINED IN 1922

Parasites Harbored	Type of Case Examined	Infected	
		Number	Per Cent
<i>Ascariis lumbricoides</i>	Cured*	592	48.0
	New†	175	58.3
<i>Trichuris trichiura</i>	Cured	513	44.0
	New	155	51.7
<i>Strongyloides</i>	Cured	307	24.9
	New	59	19.7
<i>Schistosoma mansoni</i>	Cured	72	5.8
	New	2	0.7
<i>Salmonella coli</i>	Cured	2	0.2
	New		
No parasite	Cured	266	21.6
	New	59	19.7

* Cases of 1,234 persons who were cured in 1915-1917.

† Cases of 260 persons who were not examined and not treated in 1915-1917.

started in an area which has not been previously sanitized. Varying opinions obtain as to the length of time that should elapse between sanitation and treatment, but a conservative estimate is six months. It is held by some that sanitation should accompany or follow the treatment campaign, but it seems logical to reduce the possibilities of reinfection to a minimum before treatment is undertaken. In a well-organized campaign, sanitation in a given district can always be completed during treatment operations in other districts.

If this plan is followed, however, the sanitation campaign must be accompanied by much more educational propaganda than is necessary when it follows the treatment campaign, a measure which in itself is of considerable value to the community. Latrines should be built not only at the homes of the laborers but also in the fields where they work, for it is in the latter places that most of the infection occurs. The skin of the feet and legs should be protected from contact with infested

TABLE 6.—INFECTION RATE IN 1922 IN RELATION TO THE USE OF LATRINES

Population of the area	7,166
Number of latrines	141
Average number of persons using each latrine	50.8
Number of persons examined	1,234
Number found infected	262
Persons stating that they use latrines	33
Number infected among persons claiming to use latrines	4
Per cent infected of number claiming to use latrines	12.1
Per cent of total number infected	1.5
Persons stating they did not use latrines	1,201
Number infected among persons not using latrines	258
Per cent infected of number not using latrines	21.5
Per cent of total number infected	98.5

earth by shoes or other covering. Intensive treatment work should not be discontinued until an organization competent to continue control operations is functioning. The construction of latrines is only the beginning of sanitation. Public health education is the power that keeps in motion the machinery of sanitation. An organization competent to maintain unrelaxed public health education, sanitation and treatment is essential to the maintenance of the results of hookworm-disease prophylaxis.

SUDDEN DEATH IN SCARLET FEVER

REPORT OF TWO CASES*

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During a period of nine years (1913-1921), 2,322 patients with scarlet fever were treated at the Durand Hospital, with a total mortality of eighty-five, or 3.7 per cent. In two instances, death occurred suddenly and unexpectedly with only slight premonitory signs, and when each patient appeared to be on the road to convalescence.

REPORT OF CASES

CASE 1.—A previously healthy woman, aged 23, complained of sore throat, March 16, 1914, followed in six hours by a chill, headache, backache, nausea, a temperature of 103 F., a pulse of 110, and respirations numbering 24. The following day a typical scarlet fever rash appeared on the chest and rapidly spread over the body. There was a whitish exudate on the tonsils from which no diphtheria bacilli could be cultivated. The temperature ranged from 102.8 to 104.4 F., and the pulse from 110 to 120. March 18, the fever and pulse were about the same as on the previous day. There was a trace of albumin in the urine, with many leukocytes but no casts. Though next day the fever and pulse continued about the same, a few granular casts appeared in the urine, and the leukocytes in the blood numbered 26,350, of which 85 per cent were polymorphonuclears. March 20, the temperature was from 101.5 to 102.8 F., the pulse 88 to 120. The cardiac apex was beneath the fifth rib, 2 cm. to the left of the midclavicular line, and hard to localize. As determined by percussion, the cardiac border was beneath the third rib about 3 cm. to the left of the midclavicular line on the left.

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† This case was referred to by Rosenbaum (Arch. Int. Med. 26: 424 [Oct.] 1920).

and at the right sternal edge on the right. No murmurs or friction sounds were heard. On the morning of March 21 the sixth day of the illness, the patient felt and appeared better. The temperature ranged from 101.7 to 102 F, and the pulse from 110 to 114. The administration of an enema of 1000 cc of salt solution was completed at 11:30 a. m., and it was expelled ten minutes later. At 11:45 a. m. with no exertion other than the expelling of the enema the patient became cyanotic, pulseless, gasped a few times, and was dead at 11:50 in spite of stimulation and artificial respiration. No necropsy could be obtained.

CASE 2—A woman, aged 34, was taken suddenly sick with a sore throat, fever and general aching, Sept. 28, 1921. She continued to have fever, headache and diarrhea, and on October 2, a rash appeared on the neck and chest and rapidly spread over the body. October 3, she was admitted to the Durand Hospital. The trunk and extremities were covered by a pronounced typical scarlet fever rash. The throat was very red, with a thin, grayish white exudate covering both tonsils and extending to the velum palati, from which no diphtheria bacilli could be cultivated, but yielding abundant colonies of hemolyzing streptococci on blood agar plates. The tongue was coated with prominent papillae. There were 25,300 leukocytes in the blood, of which 92 per cent were polymorphonuclears, 5 per cent large mononuclears and 3 per cent small mononuclears. During the day the temperature ranged from 101 to 103.2 F, and the pulse from 110 to 116. Aside from the increased rapidity of the beat, nothing abnormal was found in the heart. October 4 the seventh day of illness, there was pain in the right shoulder and wrist joints, and in the left wrist. The patient seemed better, and the rash was fading. The temperature ranged from 101 to 103.4 F and the pulse from 100 to 104, the pulse was regular and of good quality. At 9:45 p. m., the patient was made comfortable by her nurse, and said she felt much better and thought she could sleep. At 10 p. m., she was found dead. She had not moved from the position she occupied when last seen by her nurse, and the bed covers were undisturbed.

A necropsy was performed, October 5. The anatomic diagnosis was scarlet fever, fading exanthem, early desquamation about the neck, hyperemia and edema of the larynx and fauces, ulcerative and exudative tonsillitis, cervical adenitis, acute dilatation of the heart, with marked acute degenerative changes, petechiae of the myocardium, passive congestion and cloudy swelling of the liver, kidneys and spleen, splenic tumor, passive congestion and petechiae of the stomach and intestines, old healed pulmonary tuberculosis, with fibrous obliteration of both pleural cavities, chronic interstitial nephritis.

The heart weighed 425 gm., and was dilated, soft and flabby, filling the entire pericardial sac. The foramen ovale was closed. The endocardium was smooth and shiny, the valves were unchanged. The myocardium was red-yellow, and the cut surfaces showed many petechiae throughout. The wall of the left ventricle was 1 cm. across, the right, from 1 to 5 mm., the interventricular septum 1.2 cm. The aorta was unchanged save for a few scattered calcareous plaques. Histologic sections from the wall of the right and left ventricle, the interventricular septum, through the bundle region and near the apex showed marked fragmentation of the muscle fibers, loss of striations, with faint staining nuclei and congestion of the small blood vessels with hemorrhage. There was no round cell infiltration.

COMMENT

In each of these instances, death occurred very suddenly on the sixth and seventh day of sickness and on the fourth and third day after the appearance of the eruption.

In the first case the patient suddenly became very cyanotic and pulseless with gasping and infrequent respirations, and in spite of stimulants and artificial respiration died within five minutes after the first alarming symptoms appeared. In the second case death occurred without the slightest warning.

Nothnagel² says that "sudden cessation of cardiac action preceded by no warning has been observed in scarlet fever very rarely, and not nearly so often as in diphtheria." Trousseau,³ in his clinics, emphasizes that "of all the exanthematic fevers scarlatina is the one in which it is least possible to foresee the danger; it presents complications usually unexpected, which the most experienced practitioner cannot foresee, even when they are imminent," and "there is no disease so disconcerting to the physician or in which his previsions so often prove erroneous."

Gouget and Deschaux⁴ report a case of a youth aged 19, who had dull heart tones, bigeminate pulse, and arrhythmia at times, almost from the beginning, the pulse varying from 70 to 142 a minute. This continued irrespective of treatment. The night of the third day the patient got out of bed. The next morning he felt weak but better, when suddenly he threw back his head and became cyanotic, the pupils dilated, and respiration became noisy, irregular and ceased in a few minutes. At postmortem the heart was hypertrophied, especially the left ventricle, which was rather firm, while the right was flabby and little hypertrophied. The myocardium was red-yellow, streaked with yellow. Around the base there was a fresh pericarditis, along the anterior coronary arteries, petechiae were seen. Histologically, there was a myocarditis with round cell infiltration, chiefly perivascular, and also pushing the fibers aside. Near the external surface particularly, there was a fragmentation of muscle fibers, then nuclei staining faintly, and there was a loss of striations. The other organs were negative. Gouget and Deschaux attribute the cause of the sudden death to an acute myocarditis. They also state that "there usually are no pathologic findings that would account for death, sometimes the tissues are normal, and in others there are lesions which could not account for death, as the histologic findings bear out."

Weil and Mouriquand⁵ report a case of sudden death in a girl, aged 18 months. One month before, she was supposed to have diphtheria but all cultures were negative. On the thirteenth day following a typical onset of a moderately severe case of scarlet fever, she seemed much better, her temperature and pulse were normal. That evening she was found dead in bed. At necropsy the heart was soft, yellow-red but otherwise unchanged. Histologic diagnosis was acute myocarditis, with perivascular and interstitial round cell infiltration, and also fragmentation of the muscle fibers. Weil and Mouriquand believe that death was due to acute myocarditis with no clinical manifestations, that myocarditis occurs more often in convalescent scarlet fever than one thinks, and that while they do not deny that in some instances sudden death may be due to lesions of the suprarenals, it is absolutely necessary to examine the myocardium for often one finds there the cause without having to look elsewhere. There are also cases, such as those reported by Goldschmidt⁶ and by Roger,⁷ in which death came on from three to seven hours after the appearance of grave symptoms. Gouget and Deschaux⁸ believe that these mark the transition between the classical cases of malignant scarlet fever

² Nothnagel. *Encyclopaedia of Practical Medicine*, 1911, p. 571.
Trousseau quoted by Gouget and Deschaux. *Internat. Clin.* 3: 204, 1909.

³ Gouget and Deschaux. *Presse med.* 19: 17, 1911.

⁵ Weil and Mouriquand. *Presse med.* 19: 641, 1911.

⁶ Goldschmidt. *Bull. et mem. Soc. med. et chir. Paris* 1903.

⁷ Roger. *H. Rev. de med.* 21: 302, 1901.

⁸ Gouget and Deschaux. *Internat. Clin.* 3: 204, 1909.

and those in which death occurs in an unforeseen and sudden manner

Gouget and Deschaux, in their own cases and in those compiled by Duclos⁹ and others from the literature, point out the striking similarity in their histories "It is always on the fourth or fifth day that the symptoms appear, and in a very short space of time the patient passes from a relatively satisfactory state of health to one of utmost seriousness. The temperature rises abruptly, the pulse can no longer be counted, and in from two to four hours, perhaps a little longer, everything is over." In short, "it is the tableau of a case of malignant scarlet fever reduced to its final phase, and suddenly grafted on a case which up to that time followed normal evolution. Less commonly it may occur later when the disease is beginning to decline." In their cases in which postmortem examinations were made, they were unable to explain the cause of death.

CONCLUSIONS

1 The virus or toxins of scarlet fever seem to have an especially deleterious effect on the heart in some cases, as Welch and Schamberg¹⁰ point out. In those reported by Gouget and Deschaux, by Weil and Mouriquand, and also in ours, direct action on the myocardium is apparent. Broadbent¹¹ is inclined to believe that it has its action on the heart ganglions. No evidence was found in our case to bear out this view.

2 Since grave myocardial lesions may not be apparent clinically, and since in many of these cases death has followed some slight physical exertion, it would seem that absolute rest in bed is indicated in all cases of scarlet fever, especially during the acute stages, and more particularly in those in which one may suspect myocardial lesions.

DIPHTHERIA PREVENTION AMONG CHILDREN OF PRESCHOOL AGE

IN THE BOROUGH OF MANHATTAN AND THE
BRONX IN NEW YORK *

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Statistics on diphtheria verify the clinical experience as regards the high morbidity and mortality from the disease in young children. From 80 to 85 per cent of all cases of diphtheria and all deaths from the disease occur in children under the age of 5 years. This group, therefore, represents the most important part of the population that has to be protected against diphtheria, and the most suitable for immunization.

In proportion to its importance are the difficulties that have to be met and overcome. These young children are scattered in the individual homes, and cannot be reached as readily as schoolchildren in large groups.

⁹ Duclos. *Rev. gen. de clin. et de therap.* 9: 33 (Part 2) 1895.
¹⁰ Welch and Schamberg. *Acute Infectious Diseases*. Philadelphia, 1907, p. 443.

¹¹ Broadbent. *Jahrb. f. Kinderh.* 30: 491 1914.

¹² Read before the Section on Pediatrics of the New York Academy of Medicine Nov. 9, 1922.

* This article is abbreviated in THE JOURNAL by the omission of several forms. The complete article will appear in the author's reprints. The diphtheria prevention work in New York City which is under the general direction of Dr. William H. Park is carried out by two different groups of workers. The boroughs of Manhattan and the Bronx are assigned to the supervision of the author and those of Brooklyn, Queens and Richmond to Dr. C. M. Schroder. The methods used by the two groups are in most respects the same but they differ in certain details because of local conditions or the opinions of the immediate supervisors.

The parents have to be seen and convinced before they will consent to the immunization of their children. All this requires considerable effort and time on part of the health officer, the public health nurse, and others.

The diphtheria prevention work in the schools is a valuable preliminary step to any attempt to immunize the children of preschool age. Through the schools, the parents will soon learn to appreciate the value and the harmlessness of these newer measures of diphtheria

BABY HEALTH STATION

Important Official Notice

DIPHTHERIA PREVENTION

Department of Health

City of New York

Protect your young children against Diphtheria! Next week the doctor will vaccinate against Diphtheria the children of the Baby Health Station and also all those who are too young to go to school. Be sure to ask the nurse about this wonderful opportunity as soon as you receive this card. She will give you all the information you need. Also tell your neighbors who have young children about it. These injections may save your children's lives!

This is a special opportunity which the Department of Health offers to you. Will you not take advantage of it?

The doctor will give the protective injections on during the month of

Fig. 2—Folded mailing card

prevention. Many homes can thus be reached in a short time. The consent blanks and other literature taken home by the children tell the parents all about the work. The prestige of the school is behind this work, and the parents have to take a definite action by either giving consent or refusing to do so. We found in our school work that the wholehearted cooperation of the principal and teachers was of greatest importance to obtain successful results in a school. In some of the schools we were thus able to obtain consent from fully 60 to 80 per cent of the parents.

The campaign of last summer to reach the children of preschool age, therefore, was a logical sequence to the extensive work that was carried out in the public schools of New York City. More than 800,000 homes had been reached with the literature on diphtheria prevention. In the boroughs of Manhattan and the Bronx alone over 150,000 schoolchildren were given the Schick test. Those showing a positive reaction received the injections of toxin-antitoxin. An almost equal number were tested in Brooklyn and Queens. Repeated newspaper publicity had also been of some value. In most of the homes where there are children the parents knew what modern diphtheria prevention meant. Many of them asked us where they could take their younger children to have them immunized against diphtheria.

The work among children of preschool age, including those between 6 months and 6 years of age, was started July 1, and carried out during the months of July and August and the first two weeks of September. In Manhattan and the Bronx, the injections were given in all the baby health stations of the department of health, in five similar stations of the New York Diet Kitchen Association, and in many of the mothers and babies' playgrounds located during the summer in the play yards of the public schools.

CIRCULARIZATION OF THE HOMES

(a) The first step was to notify the parents that they now had the opportunity to have their children who were too young to go to school immunized against

Of these circulars, 150,000 were distributed through the public schools of Manhattan and the Bronx. The cooperation of the principals and teachers was solicited in asking the children to take the circulars home to their

FIG 4—Temporary diphtheria vaccination certificate

(d) A baby health contest in the Bronx and meetings of groups of parents at the schools also afford an opportunity for propaganda work.

Organization of the Personnel—In the boroughs of Manhattan and the Bronx there were seven part-time physicians, 10 laboratory assistants. These, in turn, in turn, each team consisted of a laboratory assistant and the baby health station.

It is always permissible and frequently advisable to omit the Schick test and give the injections of toxin antitoxin to all children of preschool age for two important reasons: (1) the high percentage of positive Schick

14 - Final Draft

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of the community with respect to disease prevention. It is here that the health officer and the health department can accomplish much good by giving expression to the crystallized opinion of the medical profession in the community. These two outstanding facts should be emphasized. The morbidity and mortality from diphtheria were on the increase throughout the country until very recently, and we are now able to avail ourselves of measures that will ultimately stamp out this disease.

CONCLUSIONS

1 The active immunization with toxin-antitoxin of all children of preschool age (from 6 months to 6 years) is of fundamental importance in any general campaign of diphtheria prevention and control.

2 To reach these young children, the health officer can utilize, in larger cities, the baby health stations, day nurseries, mothers and babies' playgrounds, infant asylums, clinics for children, and similar agencies.

3 It is of even greater importance to have private physicians take up this work among the young children in their private practice.

4 Preliminary work in the schools will help by spreading in the homes the knowledge of these newer methods of diphtheria prevention.

5 The high percentage of positive Schick reactions among children of preschool age indicates, under many conditions, the advisability of simplifying the procedure of immunization by omitting the preliminary Schick test in this group and giving the toxin-antitoxin injections to all children between 6 months and 6 years of age. These children should not be pronounced immune to diphtheria after the injections of toxin-antitoxin until they show a negative Schick reaction. This test might be carried out conveniently by the school physician when the children begin to go to school.

6 The injections of toxin-antitoxin produce very little local or constitutional disturbance in young children.

AN IMPROVED PROCEDURE FOR THE STAINING OF ACID-FAST ORGANISMS IN TISSUE *

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Investigators familiar with the demonstration of the bacilli of tuberculosis in tissue are aware of the difficulties attending the customary procedure of section staining, particularly in retaining the counterstain as the tissue is passed through the various dehydrating preparations, or resulting from the failure thoroughly to dehydrate the stained tissue by omitting those dehydrating solutions which attack the counterstain. Satisfactory results are even more uncertain in frozen sections than in sections embedded in paraffin or celloidin. The method described here affords a rapid and simple technic for demonstration of *Bacillus leprae* and *Bacillus tuberculosis* in tissues. Excellent results were also obtained in paraffin sections.

TECHNIC

Fresh tissue, having been hardened in a 10 per cent dilution of liquor formaldehydi for at least fifteen hours, is froze and sectioned. The thinner the section, the more satisfactory is the stain, and the finding of the organism is likewise facilitated. The cut sections are floated in distilled water and mounted on clean slides by means of a small glass elevator. They are then dehydrated by being flooded with 95 per cent alcohol, after which they are fixed to the slide with celloidin. The superfluous celloidin adhering to the slide is wiped away, and slides are placed in a glass of distilled water. They are now ready for staining. (Care must be taken that the celloidin solution is free from water otherwise, the section will not adhere to the slide.)

The old, orthodox teaching of heating or steaming in carbolfuchsin has been abandoned. Apparently, there is nothing gained by working with a hot solution, cold carbolfuchsin solution serving just as well, as was brought out by Keilty.¹

STAINING PROCESS

1 The slide is placed in a vessel containing cold carbolfuchsin and stained for from five to ten minutes.

2 It is washed in tap water and decolorized for from one to two minutes with 25 per cent hydrochloric acid (aqueous solution). If some color returns after washing in tap water, the process of decolorizing is repeated, and the slide is washed again in tap water. It is then blotted between filter papers.

3 Counterstaining is done with Loeffler's methylene blue for from one to two minutes. The choice of counterstain is an individual matter. Those in general use, such as malachite green, Bismarck brown, picric acid and methylene blue, give good results.

4 The excess stain is washed off with distilled water, and the slide is blotted between filter papers.

5 Several drops of pure anilin are quickly dropped on the color of the section should be watched. When the desired blue is obtained, the slide is immersed in a clearing mixture of one part of anilin and two parts of xylene. The slide is lifted out of the anilin mixture from time to time, and the degree of clearing and also the intensity of the blue are observed. Ordinarily, the slide is not left in the mixture longer than three minutes, but this depends on the intensity of the blue desired and the thickness of the section. The anilin and xylene dissolve the counterstain slowly, so that care must be taken not to leave the slide in the mixture too long. When the desired tint of blue appears, the section is transferred to pure xylene, in which it remains until completely cleared. It is then mounted in balsam in the usual manner.

Pure anilin dissolves the dye quite readily, as well as clears it, and care is necessary in removing the excess counterstain not to continue the process too long. With a little practice, the whole section can be run through in from ten to fifteen minutes.

1 Keilty, R. A. Hydrochloric Acid as a Decolorizing Agent for the Tubercle Bacillus. J. A. M. A. 66: 1619-1620 (May 20) 1916.

Mountains of Carbon—The carbonic acid gas exhaled by a man in twenty-four hours is estimated at about 450 liters, which would represent 240 gm. of burnt carbon and 450 liters of oxygen taken from the air to effect this combustion. At this rate the carbonic acid gas produced in a year by the whole human family would amount to about 160 billion cubic meters, which represents 86,270,000 kg. of burnt carbon. Piled in one heap, this carbon would make a mountain a league around at its base and from 400 to 500 meters high. Such is the quality of fuel required for the maintenance of man's natural heat. All of us together eat carbon to this extent and in the course of a year we breathe it out, a breath at a time in the form of carbonic acid gas. Then we start on the consumption or another pile of the same size. How many mountains of carbon, then, since the world began, must mankind have breathed out into the atmosphere—Fabre. The Wonder Book of Chemistry.

* From the Section on Surgical Pathology.

VENTRICULOSCOPY AND INTRAVENTRICULAR PHOTOGRAPHY IN INTERNAL HYDROCEPHALUS

REPORT OF CASE *

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PHILADELPHIA

In an attempt to find a means of relief in cases of hydrocephalus in children, some interesting observations have been recorded relative to the appearance of the functioning ventricle in the living subject

With the object of establishing an outlet through the corpus callosum for the relief of the acute internal hydrocephalus presented in the case reported below, an approach through the dilated ventricle with an operating cystoscope was suggested. An opening through the thinned cortex in a silent area of the brain was planned, as being a far safer procedure than the more formidable midline approach between the hemispheres ¹



Fig 1—Appearance of patient on admission showing marked enlargement of the head and expanse of the forehead

delivery, and there was a slight mark on the infant's forehead that was said to have been caused by the application of forceps. The mother had been married for two years. There was a history of a miscarriage at the end of the third month. Both father and mother were in excellent health. The blood Wassermann reaction on each was negative.

Four months after the child's birth, the mother had first noted that his head was larger than normal and, for the last six months, it had been gradually increasing in size (Figs 1, 2 and 3).

The head measured 64 cm in circumference and 42 cm from the glabella to theinion. The forehead was massive compared with the size of the body. The fontanels were wide and fluctuating. The child weighed 20 pounds, 8 ounces (9298.6 gm). The face was small. There was no ocular

REPORT OF CASE

A baby boy aged 10 months Italian was brought to the neurosurgical clinic Nov. 5, 1922, by his mother who requested that something be done to check the progressive growth of the baby's head. The child's birth had been difficult, labor having continued for three days before the infant was finally delivered by means of forceps. The mother had been torn at the time of

palsy and no paralysis of the extremities. The general physical condition was excellent. The blood and spinal Wassermann reaction were negative. The child had never been sick. The appetite had been good and the child had taken all of its feedings regularly. There had been nothing to suggest meningitis.

November 9, under light ether anesthesia a small trephine opening was made through the skull, on the right side in the postparietal region. Through a small dural slit a Cotton cannula was passed into the ventricle, which proved to be only 1 cm below the cortex. Clear fluid escaped under considerable pressure. The cannula was re-



Fig 2—Appearance of patient after third ventriculoscopy which resulted in his being somewhat brighter following relief of pressure

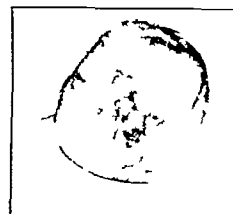


Fig 3—The enlarged head when viewed from above eclipses the entire body in size. Two small collodion dressings mark the two areas of approach.

moved, and a small No. 12 cystoscope was inserted, affording a clear view of the ventricular walls. Sketches were made at this time and the structures were noted with especial reference to the medial wall, which appeared to be quite free from large vessels near the collosal pathways (Figs 4 and 5).

The wound was closed after enough fluid had been allowed to escape to relieve the increased pressure. There was no cortical or ventricular hemorrhage. The dura was closely closed by a button-hole stitch and the skin edges were closely

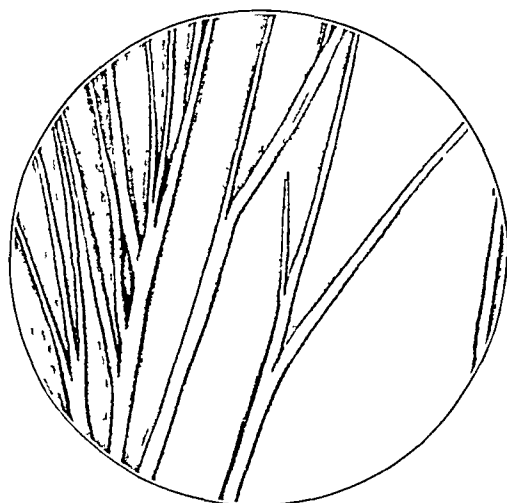


Fig 4—Peculiar appearance of the veins that stand out from the ventricular wall

approximated. The child was returned to the ward in good condition and after a slight reaction, returned to the normal in a few days.

This procedure disclosed several things of importance.

1. Ventriculoscopy can be performed with little risk and with slight reaction.

2. A satisfactory view of the lateral ventricle can be obtained and the proposed field of future operation carefully inspected.

* From the Neuro-Surgical Clinic of Dr. Charles H. Frazier, University Hospital.

1. This paper is a preliminary report of work being done on the problem of internal hydrocephalus. The condition is by no means rare. It is a frequent sequel of meningitis and possibly of trauma sustained at birth. Schuchard reports one case in every 743 births as a complication of pregnancy. Lachapelle and Duges found it once in every 2903 births and Merriman once in every 900. In September 1921 various means and methods of approach were outlined and experimental work in the laboratory was undertaken to determine the technic for the midline approach between the hemispheres. The results of this work are rapidly nearing completion and will be presented in the near future. The use of ventriculoscopy for inspection as a means of determining the pathologic condition existing in the ventricles and the employment of the photographic cystoscope to record the observation so made was proposed in September 1921. Since the inception of this problem Dandy (Bull. Johns Hopkins Hosp. 33: 189 (May 1922)) records a case in which he has employed ventriculoscopy but not photography.

3 Some interesting structures may be noted in their normal relationship

4 Direct ventriculoscropy is of diagnostic value in localizing those subcortical lesions which may cause ventricular distortions and which are often difficult to localize, and for tumors within the lateral ventricles

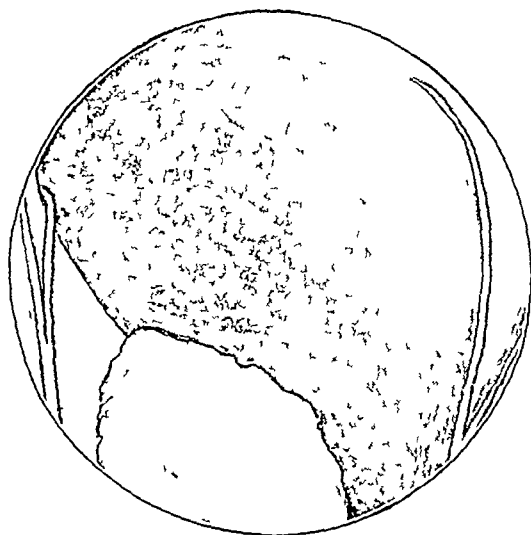


Fig 5—Appearance of posterior horn of the lateral ventricle viewed from above. The choroid lying in the foreground has a rich reddish brown appearance similar to that of a thick velvet rug

cystoscope was used on this occasion, and six exposures were made of structures seen within the ventricle (Fig 6)

As these photographs were the first of their kind, to our knowledge, the problem of time and the duration of the exposure had to be determined. The presence of the ventricular fluid and the fact that the head was slightly moved with each respiration of the patient also added difficulties to the procedure. Figure 6 illustrates the same view under exposures varying from one and one-half minutes to thirty seconds. When the cystoscope was inserted, a clear view of the ventricles was obtained, and the instrument was focused on an area that showed the choroid plexus and a series of small veins running off to the walls of the posterior horn. This field was chosen because it exhibited the contrast between the dark choroid and the pearly white surface of the ventricular wall. The cystoscope was clamped in place by a fixture attached to the table, and the exposures were made in rapid succession.

After the wound had been carefully closed the patient was returned to the ward in excellent condition. The child showed only a slight reaction following the second operation. This was probably due to the fact that only a small amount of cerebrospinal fluid escaped during the whole operation, the

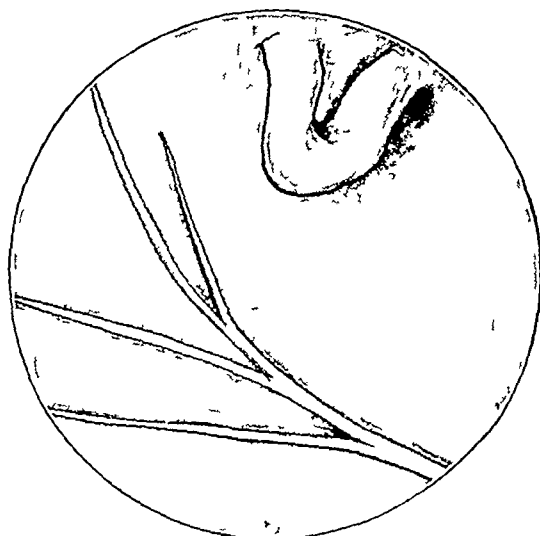


Fig 7—Peculiar vein emerging from the lateral wall and passing out again toward the cortical surface

pressure having been relieved before. The reaction was not more than would be expected in a 10 months old child following any other anesthesia.

One week later, the child was again operated on this time with the object of using an operating cystoscope and creating a permanent fistula through the corpus callosum to permit escape of the ventricular fluid into the subarachnoid space. A "high light" cystoscope was first used, and an entry made through the former opening into the posterior horn so as to familiarize the operator with the field of operation. Two interesting sketches (Figs 7 and 8) were made at this time. It was found that the instrument which was to be used for cutting through the corpus callosum was defective, so the attempt had to be abandoned. The child was returned to the ward in excellent condition, and had very little reaction following the operation. A favorable opportunity is being awaited for the completion of the final stage of this operation.

CONCLUSIONS

- 1 Intraventricular photography and ventriculoscropy are possible in the presence of dilated ventricles
- 2 Little or no reaction follows such procedure when properly conducted
- 3 The diagnostic value of direct inspection of the ventricular cavities may prove of considerable impor-

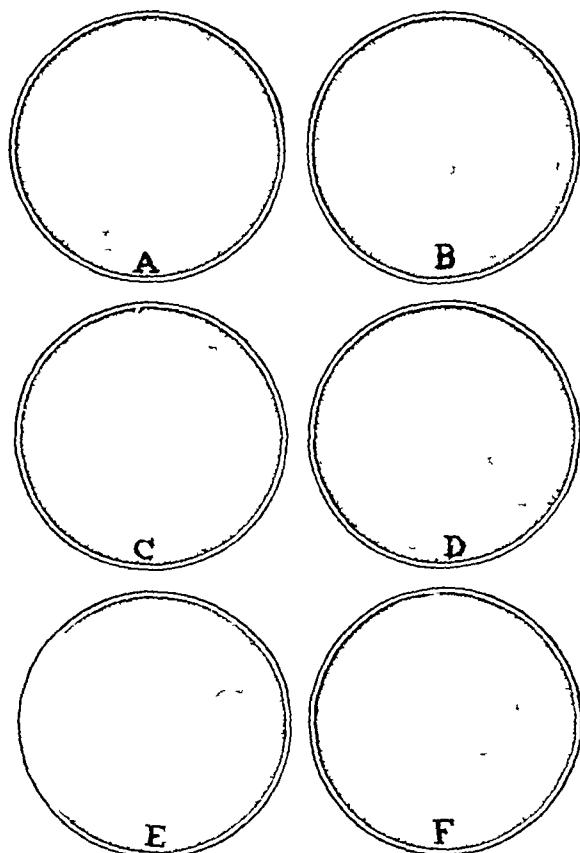


Fig 6—Exposures made within the ventricle showing the choroid as a dark mass along the floor with the light ventricular wall above. The parallel distribution of the veins is of interest. A exposure for ninety seconds. B exposure for seventy five seconds. C exposure for sixty seconds. D exposure for forty five seconds. E exposure for thirty seconds. F appearance of some of the veins on the surface of the septum lundum exposure for forty seconds

Two weeks later a second exploration was performed this time on the left side the posterior horn of the ventricle being entered from the parietal occipital lobe. A photographic

tance in determining the location and the extent of growth of subcortical lesions causing deformities of the ventricles

4 A satisfactory approach with regard to area and the extent of opening desired may be made through a

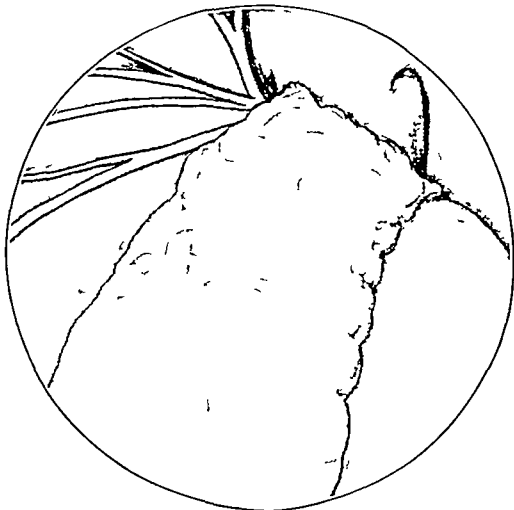


Fig 8—Lateral ventricle viewed from behind showing a large portion of choroid in the foreground and in the anterior inner wall the enlarged and comma shaped foramen of Monro connecting the two anterior horns

dilated ventricle in order to permit callosal puncture under direct observation

5 Photography for the purpose of reproducing the appearance of structures or lesions within the ventricles requires at least forty seconds exposure

A METHOD FOR THE CONCENTRATION OF CELLS AND BACTERIA IN PROSTATIC SECRETION *

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In the routine examination of prostatic secretion for the presence or absence of bacteria, and particularly gonococci, it is of the greatest importance to examine the cytoplasm of large numbers of pus cells. The small amount of pus that may be present is often so diluted with prostatic secretion that direct smears of the material are so thin as to make the finding of any number of pus cells a difficult task. The thicker parts of films dry slowly with consequent shrinking of the cytoplasm to a mere band surrounding the nucleus, within which it is almost impossible to recognize the morphologic appearance of organisms that may be present. The normal fluid itself also stains, making the examination of very thick areas impossible. After many attempts to devise a practical method of concentration of the cellular elements in prostatic secretion, the technic here described, which consists essentially of the use of proper size centrifuge tubes, has been found very satisfactory. This method has been in use for some time and has seemed to fill all requirements.

TECHNIC

A length of glass tubing of about one-fourth inch (5 mm) outside diameter is moistened and wiped dry by a cotton

plug pushed through it. It is then cut into lengths of 4 or 5 inches and the ends are held in the flame to round the sharp edges. A half inch of the middle is heated while the tube is being rotated in the flame of a small Bunsen burner until it is very pliable. The tube is removed from the flame and pulled into a large-lumen capillary about 5 inches long by slow traction on both ends. It is held taut for a moment until the glass chills. The glass is nicked lightly at *a* and *b* as shown in Figure 1. (A very small file is used or a glass cutter made from an old pocket knife by heating the blade to cherry-red and tempering by plunging in cold water. It is sharpened on a coarse grained emery wheel.)

The patient is instructed to wash the glans with soap and water, dry thoroughly and to empty the bladder. Prostatic massage is then carried out in the usual manner the fluid being collected as expelled into a medicine glass or small beaker. The short end of the glass tubing is now broken off and fitted with a good rubber bulb (Wright's red rubber bulbs as supplied by laboratory dealers). With the thumb resting partly on the glass tubing as shown at 2 in Figure 1 by rotating this member slightly, just enough vacuum is produced to take up several drops of secretion. With a little practice one soon learns the trick of allowing just sufficient suction to take up the desired quantity of fluid to fill the pipet with the suction from the bulb diminishing to nil as the pipet fills. A small drop of the fluid for a control is squeezed out on the left hand end of a slide (5 Fig 1) and spread out with the tip of the pipet. Pressure is now released and the fluid runs up leaving the tip of the pipet empty so that it may be sealed, without spluttering by holding it against the side of a Bunsen flame. The tip is removed from the flame and the bulb is gently squeezed to see whether the tip is well sealed.

The bulb is removed and the tube is dropped in a centrifuge shield which has a good rubber plug in the bottom. It is cen-

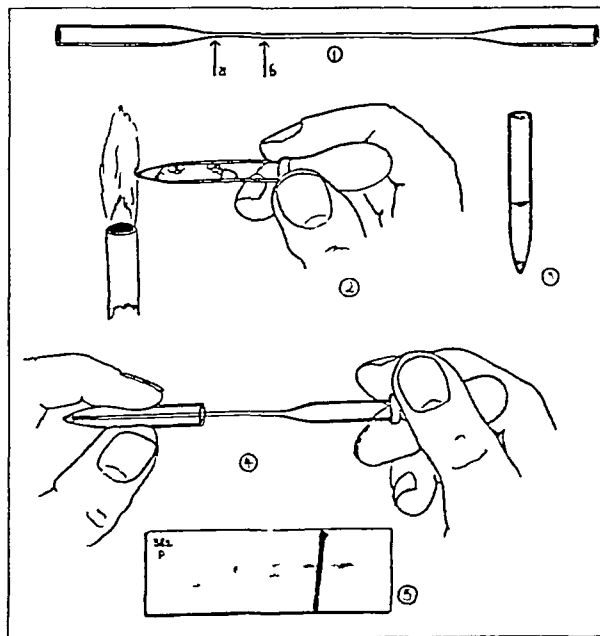


Fig 1—Details of technic

trifuged at 1500 revolutions a minute (with the usual radius from the spindle) for about one minute.

The centrifugal force exerted on a half inch layer swing at this speed and distance from the motor shaft is sufficient to throw down all cells and most of the free bacteria from the most viscid secretions encountered (3 Fig 1). Care must be taken that the point *a* at which the tube was broken shall be just at the termination of the taper. With too narrow a point a plug of mucus will adhere to the tip.

* From the Laboratory of Clinical Medicine Tulane University School of Medicine

from packing at the bottom. Slow centrifuging is not entirely compensated for by a longer time. The hand centrifuge cannot be successfully used for this purpose.

The bulb is now attached to the capillary pipet. The supernatant fluid is pipetted off and discarded. The sediment is taken up (4, Fig 1) and transferred to the middle of the slide and spread out in a long undulating wave of thick and thin places by means of the end of the pipet (5, Fig 1).

The smear dries quickly. It is fixed with gentle heat. A mark is struck across one end of the concentrated smear with a grease pencil. The short end is stained with carbolfuchsin "on and off." It is washed and counterstained with Löffler's methylene blue from twenty to thirty seconds, and dried. A field of proper thickness is selected with a low dry lens, and examined with an oil immersion lens. When bacteria are found and their morphology and cell relationship have

PNEUMOPERITONEUM AS AN AID IN THE DIAGNOSIS OF SUBDIAPHRAGMATIC CONDITIONS *

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ST. LOUIS

Since the advent of pneumoperitoneum, or air inserted into the abdominal cavity, as an aid in roentgen-ray diagnosis, much has been done to simplify the technic, and a great deal of investigation has been carried out to determine the full range of possibilities of this method.

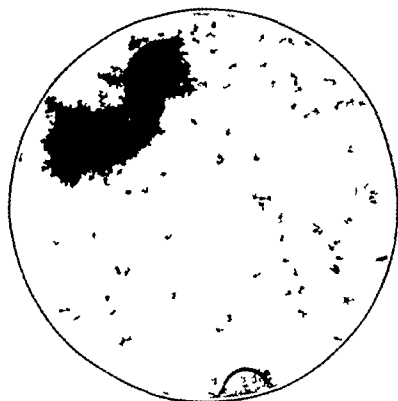


Fig 2—Plain prostatic fluid from posterior urethritis two weeks after cessation of the usual course of treatment, low dry lens



Fig 3—The same fluid after concentration, low dry lens

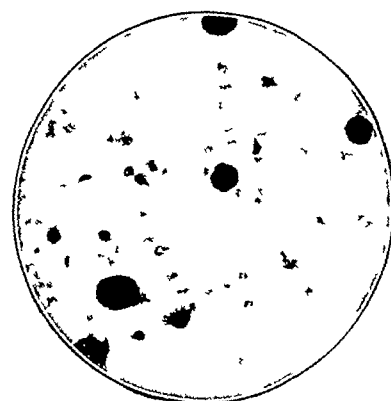


Fig 4—A typical field of the unconcentrated fluid under the oil immersion lens

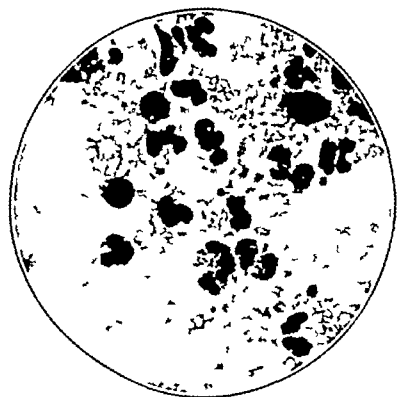


Fig 5—Concentrated preparation under oil immersion lens. To be noted are the distinct cytoplasm and nuclei of pus cells and the morphology of intracellular organisms.

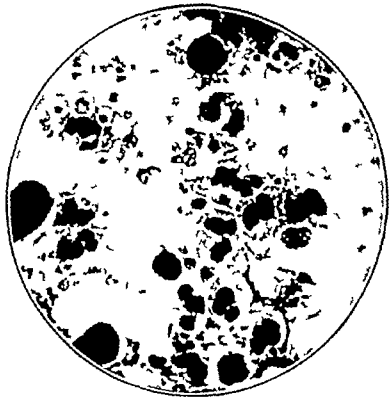


Fig 6—Other concentrated preparations, extracellular forms

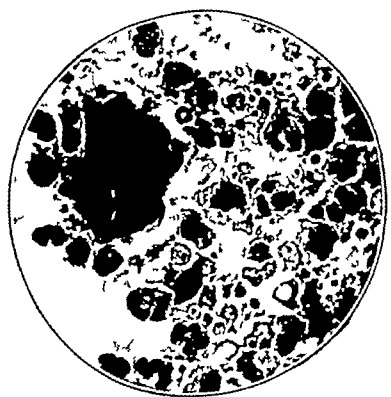


Fig 7—Other concentrated preparations, extracellular forms

been determined, the remainder of the smear may be stained with Gram's method for further differentiation.

COMMENT

While just a little more technical ability is required here than in centrifuging urine, I am convinced that the facility and certainty with which the presence or absence of bacteria may be determined will place the microscopy of prostatic secretions on a parallel plane with the indispensable urethral smear. The description as given above seems rather tedious and much longer than it really is, but the success of any method lies in the observance of the small details.

Gonococci disintegrate very quickly. Prostatic secretion should never be allowed to stand many minutes before smears are made.

Early in our experience with pneumoperitoneum, it was pointed out that this method should prove of great avail in the diagnosis of subdiaphragmatic lesions. The full value of the method was not appreciated, however, until opportunity was afforded for its practical application. Pneumoperitoneum has been of such great aid to us on several occasions, in clearing up doubtful diagnoses, that a brief consideration of its use in these lesions seems advisable. While its application in subdiaphragmatic conditions is not as wide as in some of the other regions of the abdomen, because of the limited range of subdiaphragmatic lesions, the information that it gives is occasionally of such value as to be decisive.

* Read before the Tulsa County Medical Society, Tulsa, Okla., April 26, 1922.

We have found the method of so much value in examination of acute infectious involvement of the subphrenic space that it seems advisable to call attention to this special phase of pneumoperitoneum work. Very little air is necessary in the examination of this region, and, if inflation is carried on with the patient in a recumbent position under the fluoroscope, any involvement of

definite connection between the perinephritic abscess and the effusion in the chest

The information gained by the surgeon in this instance, prior to operation, guided him in the surgical procedure and enabled him to perform a much less formidable operation than might otherwise have been the case

In a similar instance, illustrated by Figure 2, an unsuspected inflammatory process was discovered in the subdiaphragmatic region. Pneumoperitoneum was undertaken for an entirely different lesion, and the subdiaphragmatic condition was unsuspected. At least six similar cases have occurred in which pneumoperitoneum was the decisive factor in the diagnosis

Other conditions which occur in this region and in which pneumoperitoneum is occasionally of decisive aid are cardiospasm of the lower end of the esophagus which must be differentiated from an organic lesion in this region, adhesions of the viscera to the diaphragm, and hernia of the hollow viscera through the diaphragm. The diagnosis of cardiospasm by the aid of pneumoperitoneum has been previously referred to by Iglauer,¹ and its aid in this respect is undoubtedly of great benefit in certain cases. When cardiospasm alone exists, the esophageal constriction occurs at the diaphragm, and the regular dilated sac appears above. There is no evidence of involvement of the region between the diaphragm and the cardiac orifice of the stomach, a condition clearly shown by this method, and

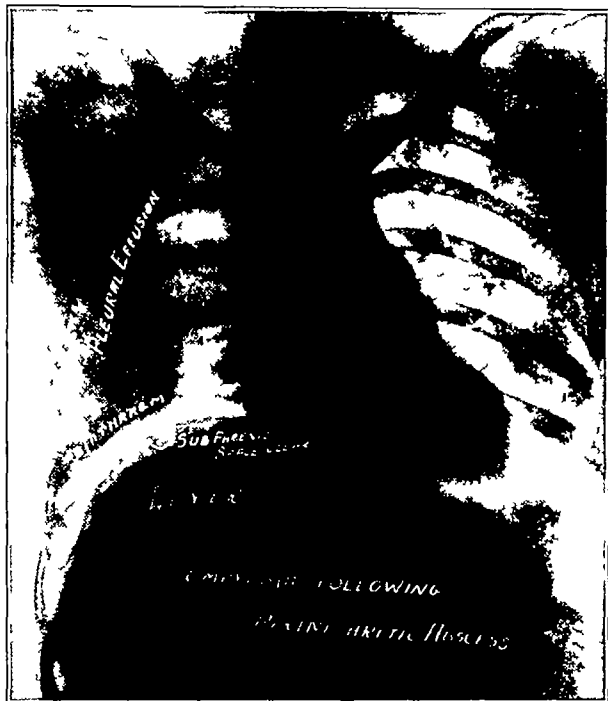


Fig 1—Pneumoperitoneum in determining the involvement or freedom of the subdiaphragmatic space in suspected acute infections of this region as an extension from the pleural cavity or otherwise. In this instance the subphrenic space is free from involvement the infectious process being confined to the chest

this space can be at once detected, and the inflation discontinued. If the procedure is carried out in this fashion, there need be little fear of breaking any existing adhesion walling off an infectious process, no matter how delicate or recently formed. Information gained in this manner, either establishing the presence of a subdiaphragmatic abscess or excluding its possibility, is of the utmost value in the prognosis and treatment of the condition. This is especially true since the accepted method of surgical procedure for drainage of such abscesses is very extensive and necessarily involves vital structures. A case in point, illustrated by Figure 1, may be of interest

A young man was admitted to the hospital with chills, high temperature and pain in the back. Physical examination revealed a perinephritic abscess, which was incised and drained. The temperature fell to normal, and the patient felt quite well. Drainage continued to decrease until, at the end of the seventh day, little if any was present. On the seventh day, however, the temperature again rose suddenly, and there were chills and profuse perspiration. Both physical and roentgenographic examinations revealed a moderate collection of pleural fluid, and there was immobilization of the diaphragm on the affected side. Pus was aspirated from the chest. At this time, hiccup commenced, persisting for several days. This, with high temperature and pain in the abdomen suggested possible involvement of the subdiaphragmatic space. Examination by pneumoperitoneum revealed that the subdiaphragmatic space was not involved and simple thoracotomy resulted in cure. Pneumoperitoneum disclosed no



Fig 2—Beginning involvement of the subdiaphragmatic space on the right side by an infectious process during a peritoneum examination for another purpose. The subdiaphragmatic area on the right is in contrast with the clear uninvolved area on the left

confirming an observation previously made by Chevalier Jackson² that cardiospasm is due to the "pinchcock action of the diaphragm." When a carcinomatous

¹ Iglauer, Samuel. Pneumoperitoneum as an Aid in the Diagnosis of Cardiospasm. New York, M. J. 115, 745 (June) 1921

² Jackson, Chevalier. Diaphragmatic Pinchcock in So-Called Cardiospasm. Laryngoscope 32, 139-142 (Feb.) 1922

involvement is present, a definite tumor mass can be seen. Barium meal examination reveals the presence of an irregularity and constriction of the esophagus, but does not show the extent of the pathologic growth. On several occasions, complete adhesion of the liver or spleen to the diaphragm has been encountered. Dense adhesions of the spleen necessarily preclude operative removal, and pneumoperitoneum should therefore be performed before any attempt at splenectomy.

The diagnosis of diaphragmatic hernia of the hollow viscera should be readily confirmed by this method.

A SKIN CANCER FOLLOWING EXPOSURE TO RADIUM*

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AND

GEORGE S. WILLIS, M.D.

NEW YORK

The patient, G. S. W.,¹ who was born, Oct. 12, 1876, had attained the age of 46 years in 1922. His father, a physician, died in 1898 at the age of 64, from prostatic hypertrophy complicated by a mitral regurgitation and nephritis. His mother died in 1918 at the age of 70 years, from angina pectoris. The patient is married and has one daughter aged 21.

The patient has practiced medicine since 1899, and he first began working with roentgen rays in 1905, employing a Wagner static machine with attachment for fluoroscopy. He habitually used his left hand as a test object. In 1909 he became acquainted with Dr. Walter Dodd, and for several summers he worked with Dr. Dodd in the Massachusetts General Hospital. He was, therefore, fully cognizant of the

sequelae of roentgen-ray burns. During 1911 and 1912 he used roentgen rays daily with the fluoroscope for examination of the stomach. In this work the palms of the hands were exposed to the rays, but always with lead glove protection. Roentgen-ray work was continued on a small scale up to 1915, and since 1917 the patient has not employed roentgen rays at all.

His radium work began in 1912 with the use of radioactive water. In 1913 and 1914 he began to handle radium bromide

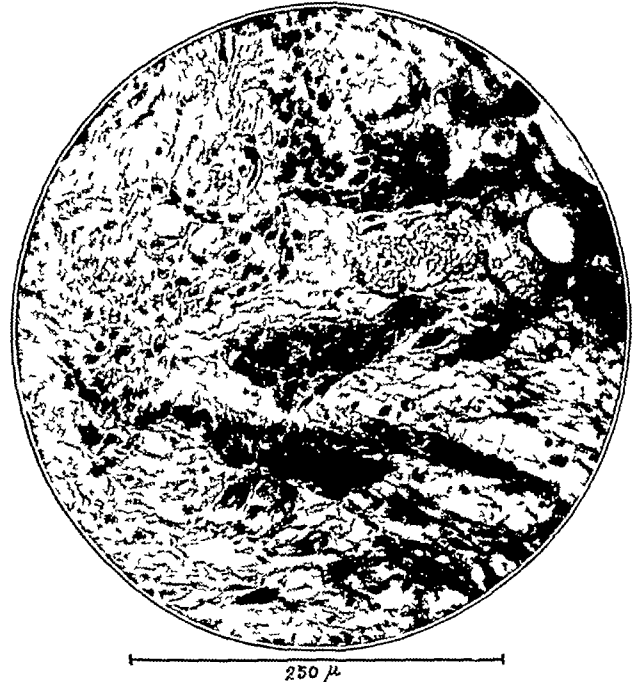


Fig. 2.—Second specimen removed November 2, portion of vascular granulation tissues containing irregular nests of atypical epithelial cells in close relation to thin walled blood vessels. Near the center, a large cell in mitosis.

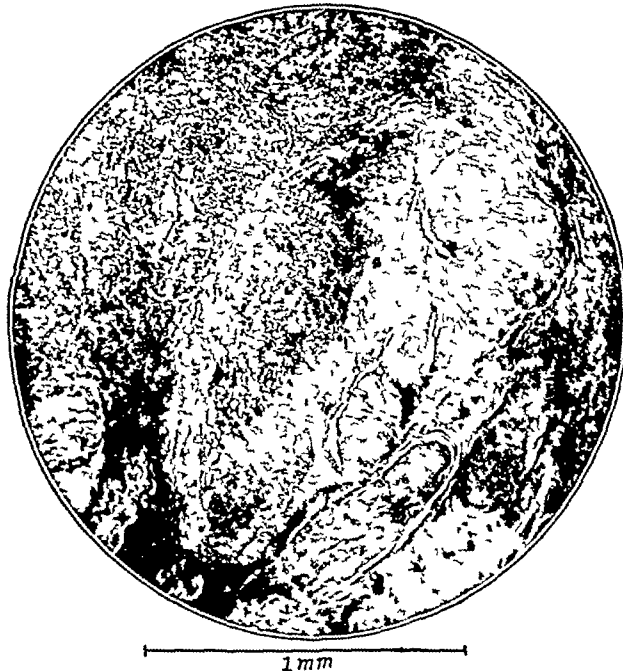


Fig. 1.—Section of the first specimen removed Oct. 28, 1922, irregular whorls of squamous epithelium, largely necrotic, marked inflammatory infiltration.

danger of roentgen-ray burns because of Dr. Dodd's experience, the latter having undergone no less than forty-six surgical operations before he eventually succumbed to the

radium sulphate and mesothorium in glass tubes, having at his disposal about 50 mg. in all. These preparations were handled daily and very freely without protection. In 1915, much larger amounts were obtained, and he employed about 200 mg. daily, sometimes more. He habitually picked up the glass tubes to place them in metal boxes before applying the radium to the patient. In January, 1919, he obtained 365 mg. of radium in one glass tube. This he handled personally, with but little precaution, from three to five times a day, in addition to smaller units in other tubes. The tubes were seized between the thumb and finger tips. This personal handling of the radium continued until 1920. Since June, 1920, he has handled radium very little, and then only with forceps. He is right handed.

The patient observed a curious numbness in the ends of all his fingers late in the year 1918, while continuing his radium work in the army. Along with this he noted a weakness of the left arm, so that he was compelled to give up boxing, a favorite exercise. Sometimes he could not even lift a drinking glass with his left hand. This numbness has persisted up to the present time. In July, 1919, he was discharged from the Army Medical Corps and came to the New York Post-Graduate Medical School and Hospital, where he has continued his radium work. At about this time an acquaintance called his attention to the roughness of his hands, to which he had previously paid very little attention. In the following winter, about January, 1920, more serious troubles began, and ever since the hands have been a constant care. The skin became tender and sore. There was a burning sensation, sometimes an ache and often a neuralgic pain. The skin has remained rough and harsh and fissures have been almost constantly present. Bathing the hands in hot soda solution, nightly dressing with oil and occasional treatment by exposure to the sun's rays have been a regular part of his life since early in 1920.

* Read before the New York Pathological Society, Jan. 10, 1923.

* From the Department of Pathology and Bacteriology and the Radium Division of the Department of Surgery, New York Post-Graduate Medical School and Hospital.

¹ Dr. George S. Willis, one of the authors of this report.

About April 1, 1921, two very troublesome fissures appeared, one on the left thumb and the other on the middle finger of the left hand. At that time the hands were bathed in 5 per cent phenol (carbolic acid) solution, and the fissures were then treated with solutions of brilliant green and gentian violet for one day. At the end of the day there was considerable redundant granulation tissue which was extremely sensitive. The next day the pain in these fissures was agonizing. Orthoform ointment was applied. At a consultation, possible malignancy was considered, but a diagnosis of infectious granuloma was made. April 10, a culture revealed numerous hemolytic streptococci in the lesions. The patient was confined to bed for three weeks, and suffered indescribable pain. The lesions were treated by exposure to sunlight, to red light and by bathing with iodine lotion. They healed in July. After that hydrous wool fat (lanolin) was applied every night.

Early in January, 1922, daily massage treatment was begun, and was continued for about two months. Later in the month a fissure appeared through the middle of a hyperkeratosis on the ball of the right thumb. From January to June this fissure remained open continuously, and it was protected with adhesive plaster or by a bandage. Various ointments and lotions were tried. Phenol seemed to afford most relief.

In July, a fissure appeared on the middle finger of the left hand at the site of the earlier serious lesion. This was exposed to 75 mg of radium in a platinum-iridium needle for twenty minutes, and it healed about August 1. At this time he applied a similar 75 mg needle of radium to the old fissure in the right thumb for twenty minutes. This was not so successful, and the fissure persisted unhealed. About August 20, this lesion suddenly became much more painful, keeping him awake at night using a bath of phenol every hour. The fissure remained the same size, but the surrounding tissue became more prominent. The patient went to the seashore, September 1, where he soaked his hands in the sea water all the forenoon and exposed them, especially the

during which time the lesion became transformed to a flat ulcer about 10 mm square, much larger than before and just about as painful.

September 14, he returned to New York. A dram of scarlet red ointment mixed with an ounce of olive oil was applied for twenty-four hours. The pain at once became worse, and overproduction of granulation tissue appeared.

This treatment was stopped after one day. The pain was now so severe that the patient walked the floor every night,



Fig 4—Second specimen. Skin at extreme edge of specimen. Surgical incision is the left border. The carcinoma evidently infiltrates beneath the cutaneous epithelium to the surgical incision.

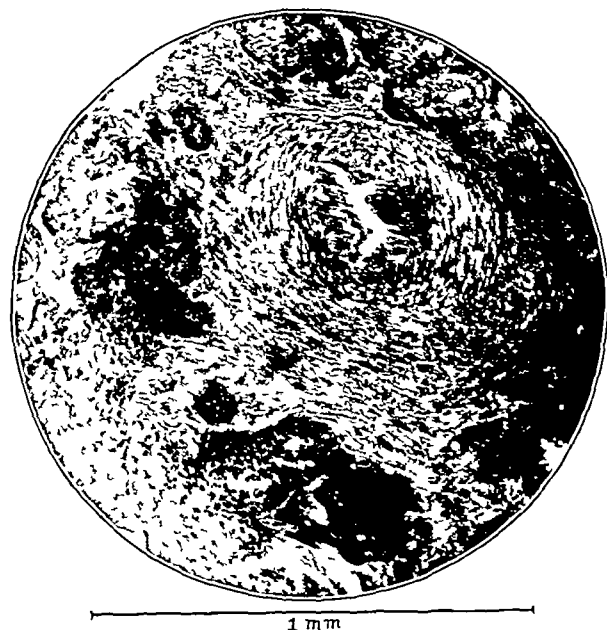


Fig 3—Second specimen. Small artery almost surrounded by nests of tumor cells. Arterial wall thickened and the lymph spaces in the media distended. This change corresponds to the vacuolizing degeneration of Gassmann (described by him (Fortschr. d. Geb. d. Röntgenstrahlen 2:199, 1898-1899) as a characteristic arterial lesion in roentgen ray dermatitis). The close relation of the new growth to a vessel of this size is significant of the deep infiltration which has taken place.

sore thumb, to direct sunlight all the afternoon. At night he put on a dressing wet with a solution of sodium hypochlorite (hyclorite), which seemed to relieve the burning. This was continued for the first two weeks of September

and was compelled to keep the hand elevated all the time.

The protrusion of granulations continued, and the lesion progressively enlarged until nearly the whole ball of the thumb was involved. Clinically, it resembled the lesions on the left thumb and middle finger of the previous year, lesions which healed. The clinical diagnosis was infectious granuloma.

Excision of the central portion of the lesion was performed by Dr J J Moorhead, October 28. The remainder of the lesion was excised, November 2, and the thumb was amputated by Dr John F Erdmann and Dr J J Moorhead at the carpometacarpal joint, November 4. After the third operation there was great relief from discomfort, and the surgical wound healed with reasonable promptness.

At present (December, 1922), the skin over the backs of the hands appears almost normal except over the distal phalanges, where the epidermis is thin, smooth dry and translucent so that the color is red. The palmar skin of all fingers is markedly altered rough and hard and harsh to the touch. On the left hand this alteration extends over the palm back to the wrist. On the right hand the palm is distinctly softer. There is a thick keratosis under the nail of the left thumb, with a healed fissure running through it and a thick keratosis along the thumb side of the left middle finger. All the nails show exaggerated longitudinal striping more marked on the left hand.

PATHOLOGIC REPORTS

First Specimen—This tissue removed Oct 28, 1922 was designated by the surgeon as "ball of right thumb chronic inflammation of repeated radium irritation."

Gross—One piece measured 22 by 10 by 3 mm. It was mottled yellow, white and gray on one surface and appeared to be largely necrotic. The tissue beneath was white and firmer than the surface, and showed hemorrhagic markings.

The second piece measured 12 by 10 by 3 mm. This resembled the deeper parts of the first piece. It was generally soft.

Microscopic Sections revealed the tissue to be necrotic for the most part. In it, however, one could recognize numer-



Fig 5—Third specimen, removed November 4, from edge of amputation incision at base of thumb. There is general hyperkeratosis and near the center an edematous area infiltrated with round cells and plasma cells. This area includes the malpighian layer of the epidermis and the underlying dermis. It bears a suggestive resemblance to similar lesions described and figured by Unna in chronic roentgen ray dermatitis.

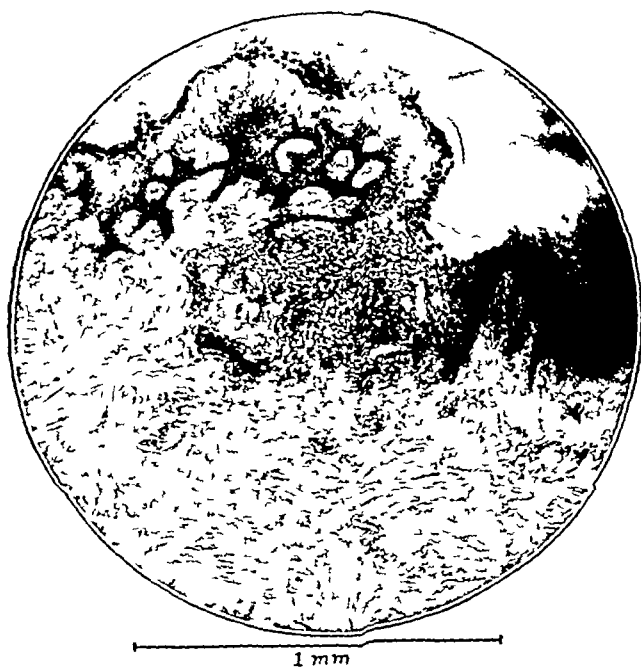


Fig 6—Third specimen from the vicinity of amputation incision. The changes are of a more severe grade than shown in the preceding picture. Hyperkeratosis and parakeratosis of the epithelium and exaggeration of the interpapillary epithelial ledges are distinct. Near the center is a large edematous area infiltrated with round cells and plasma cells and involving the malpighian layer as well as the dermis. Such a picture explains in part the roughness and hard texture of the skin and suggests a possible point for initiation of malignant activity.

division figures were moderately numerous, as many as four being found in one oil-immersion field. The specimen did not present any normal tissue, so that the relationship between the normal and the abnormal could not be seen.

The appearance was highly suggestive of disintegrating squamous-cell carcinoma, but one would not be justified in making such a diagnosis without a more satisfactory specimen. It was suggested that a section including the border of the lesion, together with some of the adjacent more normal tissue, be submitted for microscopic examination.

Diagnosis This was Inflamed and necrotic papilloma, suggestive of squamous-cell carcinoma (Specimen unsatisfactory).

Second Specimen—This, removed, November 2, included the entire visible lesion and a margin of surrounding tissue.

Gross The specimen measured 25 by 18 by 12 mm. It presented a gray, mottled, necrotic surface with underlying soft parts. The superficial portion appeared to be more dense than the deeper part.

Microscopic Sections from various portions of the specimen showed extensive necrosis and infiltration with pus. Everywhere the connective tissue stroma was invaded by irregular nests and columns of squamous epithelial cells,



Fig 7—Third specimen in upper part sections of nerve. The fibrous sheaths are thickened. The changes have not yet been studied in detail, but it appears possible that the numbness of the skin may be related to such alterations in the nerves.

many of which showed cornified centers. Groups of these cells were found infiltrating the lymph spaces close to the large blood vessels. Mitotic division figures were present in moderate numbers, and in some places as many as four could be found in an oil-immersion field. The epithelial new growth extended to the limit of the specimen in all the sections examined.

The extensive necrosis and the great irregularity in form, size and staining qualities of the epithelial cells, as well as their arrangement, all indicated a malignant activity.

Diagnosis This was Disintegrating squamous-cell carcinoma extending beyond the limits of the specimen submitted.

On microscopic examination of the sections from this specimen, Dr. James Ewing was consulted, and immediate amputation of the thumb was advised, November 3. This amputation was performed early on the following day.

Third Specimen—This was the thumb of the right hand, amputated at the metacarpocarpal joint.

Gross The ball of the thumb had been cut away over an area 37 by 23 mm. In the distal portion, under the nail, the

ous irregular whorls of squamous epithelium. One small bit of tissue which was viable was made up of squamous epithelium with atypical cornification. In some places mitotic

surface was mottled gray and dark brown, and was evidently extensively necrotic

Microscopic Sections from the floor of the wound cavity and from various places at its margin showed general inflammatory infiltration, and in several places small groups of the atypical squamous cells of the new growth

Sections from the skin margin of the amputation wound disclosed that the skin was free from recognizable tumor cells. Even here, however, there was a definite excess of round cells in the lymphatic spaces about the subcutaneous blood vessels. There was also marked hyperkeratosis and parakeratosis of the epithelium

Diagnosis This was Squamous-cell carcinoma of the distal phalanx of the right thumb, extending to the base of this phalanx. Mild inflammatory reaction at the site of the amputation incision at the level of the base of the first phalanx. Hyperkeratosis and parakeratosis of the cutaneous epithelium, even at the edge of the amputation incision

COMMENT

It will be noted that the skin at a distance from the malignant lesion showed peculiar changes which bear a remarkable resemblance to some of those that have been described by Unna² in roentgen-ray dermatitis. The detailed consideration of these changes is beyond the intended scope of the present communication. We believe, however, that they are, in this case, related to radium exposure rather than to exposure to roentgen rays

The accompanying illustrations are sufficiently explained by their legends. They are photomicrographs, not retouched

We are willing to admit that the earlier work with roentgen rays throws some doubt on the causal relation of the radium to the lesions in this case. On the other hand, it is also evident that the exposure to roentgen rays was slight and somewhat remote in time in comparison with the more recent intensive exposure to large amounts of radium rays. It is at least clear that this exposure to radium has not sufficed to prevent the development of the carcinoma even if we would deny it any part in the causation. We are strongly inclined to the opinion that radium may, when exposure has been sufficient, give rise to changes in the skin predisposing to development of malignant new growth, much in the same way as roentgen rays are now generally known to do, and that radium has had precisely this effect in the instance before us. The reputation for harmlessness in this respect enjoyed by radium may after all depend on the fact that, so far, not very many persons have been exposed to large amounts of radium by daily handling over long periods. With the use of larger quantities of radium there is good reason to fear that neglect of precautions may result in serious injury to the radium workers themselves. For this reason the present case report has been presented

SUMMARY

1 The patient worked with roentgen rays in his practice from 1905 to 1917 but not since then. Precautions for self-protection were carefully employed

2 From 1912 to June, 1920, he handled radium, without precautions for self-protection, in small amounts up to 1915, but in quite large amounts from 1915 to 1920, from 200 to 365 mg in individual tubes, taken between the right thumb and forefinger almost every day

3 Various changes, which may be ascribed to the exposure to radium, began to be observed late in 1918,

and since early in 1920 the skin changes have required constant care

4 In September, 1922, a fissure on the ball of the right thumb manifested a peculiar and extremely painful alteration in character, and on excision in October this lesion proved to be a squamous-cell carcinoma

Clinical Notes, Suggestions, and New Instruments

FRACTURE OF THE HEAD OF THE FEMUR WITH DISLOCATION ON THE DORSUM OF THE ILIUM

GUY HINSDALE M.D. HOT SPRINGS VA

The great rarity of fracture of the femoral head makes this case worthy of record. It occurred in a woman aged 55, whose weight was about 160 pounds (72.5 kg). She fell in attempting to jump from a motorboat to a wharf, she had reached forward to take a hand offered to her, and in jumping tripped over the gunwale of the boat and fell on the wharf, striking her left hip. She was immediately conscious of a severe injury, and stated that she had dislocated the right hip joint. She was unable to rise or move the limb, and was carried a short distance to her home.

I saw her at the landing and took her to her room where an examination disclosed the thigh partly flexed, the foot inverted, the limb shortened, and a slight crepitus on effort at rotation. The deformity was typical of dislocation on the dorsum ilii. On rotating the femur with the leg flexed, I could easily feel the rotation of the trochanter. Dr. B. Farquhar Curtis of New York was kind enough to see the patient shortly afterward and under either both of us made ineffectual efforts to reduce the dislocation. On a long radius adduction and rotation in the usual manner to effect reduction of the dislocation, it was not possible to effect a permanent reduction. The head could be placed opposite the acetabulum but would not enter. We thought that some ligament or the capsule intervened. Crepitus was felt in these attempts. The shortening was about 3 inches.

The following morning the patient was taken 30 miles to Portland, Maine where a roentgenogram revealed a fracture of the femur with the fragment lying on the lower margin of the acetabulum. There was a posterior dislocation of the femur on the dorsum of the ilium. Dr. E. G. Abbott to whose care the patient was consigned, operated the same morning and after opening the joint removed the fragment and effected reduction of the luxation. The wound was closed and a Buck's extension applied to the limb.

The fragment comprised about one third the head of the femur. It measured 15 by 35 by 30 mm and included the insertion of the ligamentum teres. The roentgenogram showed this fragment plainly on the lip of the acetabulum.

Recovery was prompt and satisfactory. The extension was removed in three weeks and motion instituted at the joint. The patient walked in two months, and in four months was perfectly well.

As to causation is it not possible that the catching of the foot on the side of boat turned the head of the bone out on the edge of the acetabulum, and in the fall the patient struck the trochanter or fell with bent knee on the lower end of the femur? In either case a violent shock to the femur driving the head against the brim of the acetabulum, might have split the head, part of it breaking off, while the bulk of it slipped out of the joint producing a posterior dislocation. Fracture of the head of the femur is so rare that Keen¹ says that only three positive cases have been reported. Cotton² states that the only cases he has seen have been associated with dislocation. The last one was associated with a dislocation quite complete occurring in a Charcot joint then in the est-

2 Unna P. G. Die chronische Roentgendermatitis der Radiologen, Fortschr. a. d. Geb. d. Röntgenstrahlen 8: 67-91, 1904-1905

1 Keen Surgeon Philadelphia W. B. Saunders Co. 1914

2 Cotton F. J. Personal communication to the author

stage" Of course, epiphyseal separations occur in children, but these are not what we are considering at present

Keen refers to a case reported by Riedel and quoted by Hoffa which "resembled a backward dislocation of the hip, the operation revealing a splitting of the neck and head longitudinally"

In the case I have described, the strain exerted was comparatively slight, a misstep and fall, but the strain was exerted during an extreme position of the limb

POSTINFLUENZAL HERPES ZOSTER

LESTER HOLLANDER, M.D., PITTSBURGH

The case here recorded presents a number of interesting points, in particular the after-effects of the recent influenza epidemic

REPORT OF CASE

Mrs W D W, aged 63, American born, a widow, seen, March 2, 1922, presented a marked vesicular eruption along the entire course of the eleventh dorsal nerve, beginning in the median line of the back and extending under the breast to the midclavicular line. The diagnosis of herpes zoster was unquestionable. The patient had been in perfect health during her entire life. There had been one pregnancy.

In March, 1919, she suffered a slight attack of influenza, which kept her in bed for three days. Her symptoms were mild and of the respiratory type. After getting up, she could not go through her daily routine as before, and she felt tired. Occasionally, she experienced vague pains, which her physician attributed to a gastro-intestinal toxemia, although there were no other symptoms except occasional lassitude, early exhaustion and vague pains.

After about a year, the patient was taken to a hospital, where a thorough search for a focus of infection or a manifestation of a metabolic disorder was made. As nothing was found, she was discharged.

In the fall of 1920, the vague pains, which continued, became localized about the sacro-iliac region, running down the left iliac fossa and about the thigh. This was considered from the angle of renal calculi, stricture of the ureter, sciatica and retrocecal appendicitis. The pains and discomfort remained the same for a few months. After a severe coryza, the symptoms became more marked, and they were accompanied by a vesicular eruption along the course of the sciatic nerve of the left side. No diagnosis was made, but the subsequent examination of the scars, their unilateral character, and the previous history stamps the condition as herpes zoster.

She was fairly comfortable from October, 1921, until January, 1922, when she again suffered pain and discomfort, in the right upper abdomen and right lower costal region. Examination, which was made for pleurisy, chronic appendicitis, gallstones, cholecystitis and duodenal ulcer, was without results.

About the middle of February, the patient had an attack of grip, and shortly afterward the pain about the chest became much more severe. It was followed by a herpetic eruption, which diagnosed as stated. A protective dressing controlled the eruption which lasted about six weeks, drying off very slowly and leaving the skin highly sensitive to pressure, cold or heat. As the patient said the skin felt "like cigaret paper."

Internally, large doses of neocinchophen were given and eliminative measures were carried out. The pain though less acute after the disappearance of the eruption continued until July.

In June the patient could not use her right arm on account of pain and discomfort. Shortly she developed a brachial neuritis (neurologist's report). This increased in severity for about six weeks and resulted in an ankylosis of the right shoulder, through disuse.

Although a fair amount of motion returned, the patient is at present (Jan 3, 1923) still suffering with pain in her right arm and shoulder, the motion of which is greatly impaired.

COMMENT

This case presents several points of interest

1 The history of a mild attack of influenza, with slow recovery

2 Two attacks of herpes zoster, with a protracted and insidious onset, precipitated in each instance after an intercurrent infection

3 The appearance of a brachial neuritis, which may again be shown, as on two previous occasions, to be a herpetic manifestation

4 The apparent continuity and ascent of the involvement of the posterior root ganglions, sacral, dorsal and cervical

The explanation which suggests itself is that, after the slight systemic influenzal attack, the infection became dormant in the posterior root ganglions and made its appearance as a chronic infection, with exacerbation at a time when the patient's resistance was lessened by an intercurrent infection

625 Jenkins Building

CASE OF CEREBRAL NEOPLASM SIMULATING DEMENTIA PARALYTICA WITH OPERATION AND COMPLETE NEUROLOGIC AND MENTAL RECOVERY

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That intracranial growths are often responsible for varied psychotic disturbances is well known to neuropsychiatrists. These mental changes may vary from mild alterations to grave psychic defects. Nor is the location of the tumor mass indicative or diagnostic of the psychosis which may be part of the clinical picture. In other words, it would be absurd to attempt localization of an intracranial mass on the evidence furnished by the psychic alterations. One has to depend entirely on the disturbances in neurologic functions for localizing data. Some modifications of these recognized observations may be made, however, in growths involving the frontal lobes. In this area, a fairly well defined psychotic picture unfolds itself, so that, in association with other neurologic signs, one may safely venture a positive localizing diagnosis.

The case here reported presented the neurologic signs and the psychiatric picture in a manner so vivid and clear cut that the diagnosis and localization were a matter of comparative ease. Since the mortality in brain tumors still remains discouragingly high, and this patient survived the operative procedures and made a complete mental and neurologic recovery, one is warranted in giving the sequence of events in an interesting neuropsychiatric syndrome.

REPORT OF CASE

History—A man, aged 50, a butcher, gave a history that was uneventful until fifteen years ago, when he was struck on the right side of the head with a glass bowl. He was not rendered unconscious, and the scalp wound healed readily. Apparently, there were no disturbing factors until, within a few months after the injury, an insidious headache developed which, as the years went by, became increasingly worse. The pain was little abated by the ingestion of headache remedies in large amounts, taken over a period of fourteen years. The headache was more or less continuous and was worse at night. Although there was some remission in its severity, it was never entirely absent. The idea of suicide was often entertained by the patient as a relief from his miserable condition. Two years ago, he showed for the first time a decided personality change. He neglected and mismanaged his business, indulged in fantastic financial transactions, became unduly generous to friends and strangers, and thus managed to rid himself of all his money and business. Marked irritability of temper also became manifest and memory defects particularly for recent events. No gross conduct anomalies intruded themselves in the clinical picture, but an inordinate sense of well-being particularly noticed by his relatives became increasingly evident. Defects in the psychic and

* Presented before the Section on Neurology and Psychiatry of the New York Academy of Medicine Dec. 12, 1922.

emotional sphere now became obvious by the development of alternating periods of depression and elation, indulgence in silly witticisms—the “witzelsucht” of the Germans—and minor infractions of conduct. At this time, a diagnosis of paralytica dementia was seriously entertained by his medical advisors. About one year ago, his vision became affected, and diplopia was complained of a number of times. There was no vomiting, vertigo or gait disturbance at any time during the course of the affection. The constitutional state remained excellent, the digestive system functioning in a normal manner. In spite of his condition, a steady gain in weight was noted. Sleep was disturbed on account of the headaches. Convulsive phenomena were present twice, six weeks before the operative procedure was undertaken. There was complete loss of consciousness both times, recovery being complete without residual phenomena of any type.

Examination—There were no abnormal attitudes of the voluntary motor system. Gait and station were entirely normal. All coordinative tests were correctly performed. All skilled test acts showed no deviation from the normal. There was no dysmetria or other disturbances of dyssynergia.

The deep reflexes of the upper and lower extremities showed a greater activity on the left side than on the right side.

The superficial reflexes showed normal responses, with the exception of the left abdominal which were elicited with difficulty and at best responded feebly. A suggestive pathologic extension of the great toe was present on the left side. There were no abnormal involuntary movements or demonstrable abnormal associated movements. The peripheral neural apparatus showed no pathologic alterations or impairment in its behavior.

The general sensory examination revealed no demonstrable deviations from the normal.

Cranial nerves The pupils reacted promptly to light and accommodation. The fundi oculi showed marked narrowing of the arteries, engorged and tortuous veins, retinal hemorrhages and edema around the nerve heads, with an elevation of 4 diopters in the right eye and 6 diopters in the left eye. The seventh nerve on the left side showed a central type of palsy, which manifested itself in voluntary efforts and emotional behavior. The rest of the cranial nerves showed complete functional integrity.

Serologic examination of the blood and spinal fluid was entirely negative.

Comment—Thus, we have a history of trauma (a not uncommon provocative factor in brain tumors), headaches extending over a period of many years, grave psychic changes, which simulated paralytica dementia quite faithfully, and finally the development of left sided hemiplegic phenomena plus marked double choked disks.

Diagnosis—In view of these findings, a diagnosis of right frontal lobe neoplasm was ventured and the patient was referred to Dr. Elsberg for operation.

Operation and Result—A large growth occupied the right frontoparietal area, extending from the dura to the base of the frontal fossa, and displacing the brain mass in all directions for a considerable distance. It was readily removed, and proved to be an endothelioma, which had evidently taken its origin from the dura mater.

The patient showed no ill effects from the operation and no disturbing incidents marred his convalescence. There were no further headaches, the mental condition cleared up amazingly within a short time after the operation, and the elevation of the disks receded to normal, although some haziness of the nerve head with slight blurring of the edges still remains as the sole residual of the preexisting papilledema. The hemiplegic phenomena have disappeared, a very slight increase in the reflexes being still discernible as evidence of a former involvement.

At present, a little more than six months since the removal of the tumor, the patient is actively engaged in business and is apparently in excellent physical and mental condition.

370 Central Park West

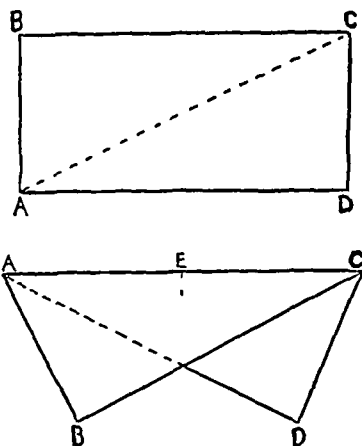
A DOUBLE TRIANGLE TOWEL SHOULDER CAP

GEORGE DAVID CUTLER M.D. BOSTON

I have found the folded towel shoulder-cap here described useful to retain dressings on wounds of the shoulder the axillary region and the groin. It has been used successfully as a shoulder-cap in combination with a swathe following operations on the breast, especially to complete the dressing of the operation wound following amputation of the breast and dissection of the axilla.

A sterile towel measuring 18 by 36 inches is folded along the line *AC*. The folded towel is then placed over the shoulder so that the corner *B* falls back of the arm and *D*, in front. *A* is tucked under the swathe posteriorly and *C* anteriorly. Safety pins are employed for fastening along the line of union of the shoulder-cap and the swathe. Corners *B* and *D* are then overlapped under the arm and pinned, finishing the dressing.

A towel so folded has also been found useful as a head bandage, for which use it varies only slightly from the triangular bandage. In this connection it may be used as an operating cap. It is valuable for retaining dressings at the groin, as well as in the axilla. In the first instance, the



Double triangle towel shoulder-cap method of folding

points *A* and *C* are pinned beneath the opposite axilla. *B* and *D* are pinned under the arm on the affected side, with additional pinning at other points as required, especially in making a dart at *E*. For use at the groin, the points *A* and *C* are pinned together above the opposite hip and *B* and *D* at the inner side of the diseased or wounded thigh.

Its advantages over the triangular bandage are apparent only in the vicinity of the flexures of the body.

270 Commonwealth Avenue

A CASE OF RENAL GLYCOSURIA

WILLIAM ALLAN M.D. CHARLOTTE N. C.

In defining renal glycosuria, Strouse¹ gives four points of differentiation from diabetes mellitus: (1) glycosuria without hyperglycemia, (2) glycosuria almost entirely independent of carbohydrate intake, (3) absence of diabetic symptoms and (4) no subsequent development of diabetes mellitus. Paullin² has added a fifth characteristic in this condition that sugar shall be constantly present in the urine.

That renal glycosuria shall not later become diabetes mellitus necessitates a prolonged observation of such patients and this is the reason for reporting a case in which glycosuria was discovered eighteen years ago the patient having been employed in a hospital for the sake of supervision for the

¹ Strouse, Solomon. Renal Glycosuria. Arch. Int. Med. 20: 768 (Dec.) 1920.

² Paullin, J. E. Renal Glycosuria. J. A. M. A. 75: 214 (July 24) 1920.

last nine years Bailey³ has reported a case in which glycosuria has been known for ten years, and says, "The patient's history points strongly to this being a congenital condition." Strouse has observed a case for eight years, Garrod⁴ and Bonninger⁵ each one for six years, Goto⁶ one for five years, and Paullin one for four years. Johnsson⁷ has recently reported two cases of ten and sixteen years' duration, respectively.

REPORT OF CASE

History—A white woman, aged 35, single, who had been sent to a clinic because of infected sinuses, was referred to me, Jan 25, 1922, with glycosuria. For the preceding six weeks she had fever, headache and stopped nose, with infected left antrum and ethmoids, ten days before I saw her the nose "abscessed again," and the antrum had been washed the day before.

The mother died of heart trouble and cancer of the uterus at 50, the father was healthy at 80. The patient had four brothers, one with asthma, one with lung trouble, one with indigestion and with some sort of kidney trouble. She lost a sister from chronic interstitial nephritis following childbirth. Two sisters were living, one healthy, one with ulcerated bowels. A third cousin died with diabetes mellitus.

The patient had had pertussis, measles, chickenpox and scarlet fever, but not typhoid or malaria. She had grip in 1912, and her sinus troubles date from this sickness, in 1919 she had influenza. At the age of 12 she had severe colic all one night, and again four years later, she had diarrhea with these attacks, but did not remember having either fever or vomiting. The pain was in the middle of the abdomen. In 1918 she had severe colic across the upper abdomen, requiring morphin. She had had a good deal of colic and constipation all her life. The menstrual history had been normal. At the age of 18 she was weak, nervous and short of breath, she had pruritus vulvae, and sugar was found in the urine. She did not remember having had at any time unusual hunger, thirst or polyuria. Her weight when 18 was 108 pounds (49 kg), during the last seventeen years it had varied from 85 to 100 pounds (38.5 to 45 kg). During the first nine years after glycosuria was discovered she took medicine intermittently, and once restricted her diet for a short time. During the last eight years she had been employed in the linen room at a hospital, where she was under medical supervision. She had dieted now and then, but never adhered to a diet long, though she once fasted four days. She said that during the last seventeen years the urine had never been sugar free at any examination, but on the whole, she thought that she was as well as when sugar was first discovered.

Examination—Because of the glycosuria, the patient was referred to me for treatment, preliminary to opening the sinuses. She was pale, thin and frail, having no appetite, thirst or polyuria and suffering steadily and intensely from the infected left antrum. Five years before and again during the preceding year she had some swelling of the ankles. The skin was pale and transparent. The pupils were equal, and reacted to light and distance. The ocular movements were normal, there were no thyroid eye signs. The left antrum and ethmoids were infected. The throat, tongue and teeth were normal. There was no thyroid struma, and no enlargement of the superficial glands. The lungs were clear. The heart size and sounds, rate and rhythm were normal. The blood pressure was systolic 120, diastolic 80. There was no tremor of the extended fingers. The abdomen was normal. The reflexes, joints and spine were normal. The height was 63 inches (160 cm), the weight was 98 pounds (44.5 kg). Blood examination revealed hemoglobin 90 per cent, red cells, 4,464,000, white cells 17,600. The urine was acid with a specific gravity of 1.035. Examination was negative for albumin, bile and indican. 4 per cent glucose was present, microscopic examination was negative.

Treatment and Course—Thinking this was a case of diabetes mellitus, I put the patient on a diet of 270 gm of lean meat daily, and after six days increased this to 360 gm. with 3 ounces of thrice boiled cabbage. She began to show diacetic acid the second day, and edema of the ankles the third day of this regimen, and lost 7 pounds (3 kg) in as many days. The glycosuria was undiminished, and on the eighth day the blood sugar, two and one-half hours after 90 gm of lean meat, was 10 mg for each hundred cubic centimeters, while the urine was still full of sugar. On the thirteenth day she was given 168 gm of glucose for each kilogram of body weight. The blood sugar was 23 mg two hours later, and 15 mg three hours later. She was then given bread with each meal, and the diacetic acid disappeared after one day and the edema of the ankles after two days. Her diet was rapidly increased until she was eating what she pleased after two weeks of diet restriction in a vain effort to render the urine sugar free. During the following forty-one days on unrestricted diet the urinary output averaged 50½ ounces, with sugar constantly present, the amount excreted in twenty-four hours varying from 16 to 49 gm. Varying the diet had no constant effect on the amount of sugar excreted. On a diet containing protein, 104 gm, fat, 80 gm and carbohydrate, 62 gm, the urinary glucose amounted to 23.5 gm. On protein, 62 gm, fat, 184 gm and carbohydrate, 96 gm, only 16.5 gm of glucose was excreted. On protein, 37 gm, fat, 42 gm and carbohydrate, 68 gm, 39.5 gm of glucose was excreted. Fermentation and phenylhydrazin tests confirmed the supposition that the urinary sugar was glucose. The phenolsulphonephthalein output was always above 50 per cent in two hours. A radical sinus operation was performed under ether, February 18, with uneventful recovery. March 10, the patient was given 33 gm of glucose for each kilogram of body weight. The blood sugar before was 12 mg, and two hours after, 13 mg for each hundred cubic centimeters. In July and October, 1922, the patient still had marked glycosuria with normal blood sugar.

CONCLUSION

The various postulates for the diagnosis of renal glycosuria are fulfilled in this case, and a patient with known constant glycosuria for eighteen years has not yet developed any signs or symptoms of diabetes mellitus.

HEMATURIA AND APPENDICITIS

THOMAS W. TORMEY, M.D. AND ALBERT R. TORMEY, M.D.,
MADISON, WIS.

Many cases of stone in the ureter have been mistaken for acute appendicitis, and appendectomy has been performed, but it is rather rare for appendicitis to be mistaken for stone in the ureter.

REPORT OF CASE

History—C, a farmer, aged 52, was seized with a severe pain in the right upper abdomen, Dec 23, 1922, which persisted for one hour and was relieved by hot applications. The following day, he had another attack of pain on the right side, radiating to the scrotum and the head of the penis. He took castor oil, and felt relieved. He noticed that blood was present in the urine.

During the night, he had another attack of pain, which was so severe that he called a physician, who gave him a hypodermic of morphin and atropin. It was necessary to give three-quarters grain of morphin in order to relieve the pain. He was advised to enter the hospital, but refused. There was no rigidity of the abdominal muscles, and no nausea or vomiting.

The following afternoon, he had another severe attack of pain radiating from the lumbar region anteriorly and into the scrotum, and he passed more blood. He now consented to be removed to the hospital.

Examination—He was admitted at 11 p.m., December 25. At this time his temperature was 98.8 F, pulse 88, respiration 20, leukocyte count, 10,400. Urinalysis revealed a specific gravity of 1.030, a trace of albumin, a few red blood cells and casts + + + +. Otherwise the physical examina-

³ Bailey, C. A. *Am. J. M. Sc.* 15: 221 (Feb.) 1919. *Studies on Alimentary Hyperglycemia and Glycosuria*. *Arch. Int. Med.* 27: 455 (April) 1919.

⁴ Garrod, A. E. *Brit. M. J.* 2: 830 1912.

⁵ Bonninger, M. *Deutsch. med. Wchnschr.* 34: 780 1908.

⁶ Goto, Kinko. *Alimentary Renal Glycosuria*. *Arch. Int. Med.* 22: 96 (July) 1918.

⁷ Johnsson, A. *Finska Läk. Sällsk. Handl.* 64: 422 (Sept. Oct.) 1922. *Abstr. J. A. M. A.* 80: 70 (Jan. 6) 1923.

tion was practically negative. On account of the findings, a working diagnosis of right ureteral calculus was made.

The following day, however, he passed but 13 ounces (390 cc) of urine, which had a heavy trace of albumin and casts + + + +. He complained of being drowsy, but felt comfortable otherwise. The blood pressure was systolic, 130, diastolic, 85. Hot packs were employed, and he was given plenty of fluids, and in forty-eight hours, the urinary output increased to 35 ounces (1,050 cc), the casts and blood disappeared, and he felt better in every way. Roentgen-ray examination of the right kidney and ureter regions was negative for ureteral calculi. On cystoscopic examination, a No. 5 French catheter met some obstruction about 4 inches (10 cm) from the ureteral orifice on the right side, but there was some urine coming from the kidney. The left kidney and ureter were normal. The patient felt comfortable. There was no rise in temperature, and the leukocyte count remained at 10,500. Following cystoscopic examination, there was some local tenderness on deep pressure in the right iliac fossa.

Operation—A modified Gibson incision was made, and the lower ureter was isolated, but no evidence of a calculus was found. There was no thickening of the ureteral wall and no dilatation. On palpation, a small mass was felt within the peritoneum, and this led us to open the general cavity rather than continue toward the kidney. A gangrenous appendix dipping over the pelvic brim was found, the perforated tip being bathed in about 1 dram of colon pus. This was removed, a cigaret drain was inserted, and the wound was closed in layers.

The patient had an uneventful convalescence.

COMMENT

The case history and urinary findings, together with the lack of fever and local tenderness in the right lower quadrant of the abdomen, were sufficient grounds for a working diagnosis of ureteral calculus. The sudden decrease in urinary output following admission to the hospital also pointed to a kidney lesion.

The position of the appendix, which was lying on the ureter just below the pelvic brim, was probably the cause of the hematuria and the referred pain. It is also possible that there was sufficient congestion of the ureter at this point to interfere with the passage of the catheter.

811 816 Gay Building

A SIMPLE METHOD OF USING GIEMSA'S BLOOD STAIN

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The customary method of using Giemsa's stain by employing the freshly diluted stock solution, 1:10 or 1:15, with distilled water, makes the use of this excellent stain somewhat troublesome and expensive. The procedure here described simplifies the method, saves stain, and makes it almost as easy to use as is Wright's stain or its modifications. The blood film is fixed by immersing the slide in a jar of methyl alcohol or by pouring the alcohol over it. A half minute appears ample time. After drying, the film side is covered with distilled water, and from three to five drops of the stock Giemsa stain is added to the water in different portions of the slide. A slight rocking of the slide insures uniform mixing of the stain and water. The mixture of the stain and water is allowed to act for about fifteen minutes. The stain and water are then washed off with distilled water until the film appears pink. The results appear more uniform and certain than they do in the use of Wright's stain or its modifications for the formed blood constituents, and are particularly good in the case of malaria parasites.

Nucleoprotein in Tubercle Bacilli—While it has been known for a long time that nucleoprotein constitutes a considerable part of the cell of tubercle bacilli, it was not until 1898 that an attempt was made to separate a nucleic acid from this organism—Johnson and Brown, *J. Biol. Chem.* December, 1922.

Special Article

THE CARE AND FEEDING OF INFANTS

(Continued from page 401)

[NOTE—This is the seventh of a series of articles on the care and feeding of infants. It is addressed to the general practitioner rather than to the pediatric specialist. When completed, the series, somewhat elaborated, will be reprinted in book form.—Ed.]

THE ARTIFICIAL FEEDING OF INFANTS

A critical study of the work of the last fifty years in the artificial feeding of infants shows that the morbidity and mortality of infants has been definitely lowered. This has been brought about largely through a better understanding of the biology and chemistry of milk, and through applying to its collection and preservation the knowledge of the laws governing the incidence and growth of bacteria.

The progress during the last decade in the artificial feeding of infants may be summarized in the statement that the one great step that has placed their feeding care on a sound basis is that their physiologic requirements are now given first consideration. This has been made possible through a better understanding of individual needs in fat, protein, carbohydrates, salts, accessory food factors and water, to secure body growth and development.

General rules may be laid down for the average full-weight and robust infant (fortunately, in the majority) who only requires supervision over his reaction to a properly balanced diet. But there remains a considerable number comprising (1) infants born congenitally weak, and (2) infants who have developed pathologic conditions secondary to food disturbances and infections. These will require the *strictest individualization* in the selection and application of their diets.

If conclusions were drawn leading to the belief that our knowledge of artificial feeding is complete, great injustice would be done to the infant. Indeed, much is to be hoped for as our information on this subject advances, and this applies with equal force not only to the feeding of the exceptional and sick infant but also to the feeding of the normal child.

Laxity in the regulation of the feeding care of the infant during its first weeks is one of the greatest obstacles to a more complete success, for in this period the pathologic foundation is laid on which nutritional disturbances develop. The successful feeding of infants depends, therefore, on the recognition of the necessity of (1) a proper interpretation of the needs of the individual infant, and (2) experience on the part of the physician in meeting those needs.

COW'S MILK AND GOAT'S MILK

It cannot be too strongly emphasized that artificial feeding must not be considered as a substitute for breast feeding but only as an emergency measure. The best alternative is feeding with properly modified milk of other animals, and, for practical reasons, cow's milk and goat's milk have been found best suited for this purpose. Because of marked physical and biologic differences

and goat's milk, human milk is superior to the others in infant feeding. The differences are greater than Table 5 indicates.

COW'S MILK

Cow's milk is more opaque than human milk, although the latter may contain a greater percentage of fat. This is due to the opacity of the calcium-casein, present in greater proportion in cow's milk. Cow's milk is faintly acid or amphoteric when freshly drawn, but ordinarily is distinctly acid in reaction when consumed. Human milk is amphoteric or alkaline.

TABLE 5—COMPARATIVE ANALYSIS OF BREAST COW'S AND GOAT'S MILK

Reaction	Human Amphoteric or Alkaline	Cow's Amphoteric or Acid	Goat's Amphoteric
Specific gravity	1.010 to 1.040	1.029 to 1.034	1.030
Proteins	1.5 to 2.0%	3.5%	3.76%
Caseinogen	0.5 to 0.75%	3.02%	2.87%
Lactalbumin	1.23%	0.53%	0.89%
Effect of rennin	Clots in fine curds	Large curds	Large curds
Fat	3.5 to 4.0%	4.0%	4.0%
Lactose	6.0 to 7.0%	4.5%	4.5%
Salts	0.2%	0.75%	0.8%
Total solids	12 to 13%	13 to 14%	13.0%
Water	86 to 88%	86 to 87%	86 to 87%
Bacterial content.	Practically sterile	Never sterile	Never sterile

Three times as much protein is found in cow's milk as in human milk. The reason for this is obvious when we recall that the ratio of growth of the calf to that of the infant is about as 2:1. Furthermore, the protein in cow's milk consists chiefly of casein (3.02 per cent) and a little lactalbumin (0.53 per cent), while human milk contains from 0.5 to 0.75 per cent of casein and 1.23 per cent of lactalbumin. The sugar in the two milks varies greatly in amount but not in kind. Cow's milk contains more than three times the amount of inorganic salts in human milk.

Infants on whole cow's milk, therefore, live on a higher plane of mineral metabolism than infants on breast milk. Owing to a similar proportionate content of salts in the two milks, simple dilution, while equalizing most of the salts, will leave others either in excess or insufficient. Fortunately, excessive amounts of milk salts are rarely harmful to normal infants, as those in excess of the body needs are excreted. The greater danger lies in mineral starvation or a diet improperly balanced in its mineral content. The importance of salts to body function and growth in the artificially fed infant will be considered later in detail.

There is no great difference in the average amount of fat in the two milks, however, both in human milk and in cow's milk fat is the most variable constituent.

The curd from cow's milk is usually tougher and forms in larger masses than in human milk. There are also differences in antibodies, ferments, etc.

Protein—The protein in cow's milk consists of insoluble calcium caseinate and soluble lactalbumin, lactoglobulin, mucin and opalisin. Of these, the casein (85 per cent) and lactalbumin (15 per cent) form the greater part of the protein content, the others existing in negligible quantities.

Casein—This is in suspension, and is rapidly precipitated by weak acids and by rennin, but it is not coagulated by boiling. The casein of raw cow's milk precipitates as large tough curds, thereby differing from the fine, flocculent curd of human milk. The physical properties of cow's milk curds can be changed

by boiling the milk, and by adding alkalis, such as sodium citrate, sodium bicarbonate and lime water. Following such additions, the curd becomes finely divided, resembling the curds of breast milk. By the addition of cereal water in the milk dilution, a similar effect is obtained through the mechanical fragmentation of the curd by the interspersed starch particles. Splitting of the curd shortens the period of digestion, the finer curds passing the pylorus more readily, which brings them in contact with the intestinal juices in a shorter time.

Lactalbumin—This is not coagulated by acids or by rennin, but is coagulated by heating to 72° C. or higher.

Fats—The fat is suspended in the milk serum as an emulsion. The droplets or globules vary in size, on the average, they are smaller in milk from Holstein than from Jersey, Guernsey or shorthorn breeds. The fat droplets are lighter than the milk serum and therefore rise on standing (gravity cream), or they may be readily separated by centrifugal force (centrifugal cream). The chemical composition of the fat of cow's milk differs from that of human milk in that it contains more tripalmitin and less triolein. This difference is of practical importance, since the calcium and magnesium soaps of palmitic acid are much less readily absorbed from the intestinal tract than are the soaps of oleic acid. Cow's milk also contains a considerable proportion of glycerids of the lower or volatile fatty acids, which under certain circumstances may irritate the intestinal tract, resulting in diarrhea. Not only is there difference in the size of the fat droplets from certain breeds of cattle, but the average total fat content varies very materially. The average fat content for different herds as given by Van Slyke and Publow,¹⁷ is reproduced in Table 6.

Lactose—This is the principal sugar in both cow's and human milk, its chemical composition in the two being identical. Average human milk contains from 6 to 7 per cent, and cow's milk from 4 to 5 per cent. The larger sugar content of human milk, with its fermentation, accounts for the laxative effect of breast-milk feeding when the milk is abundant.

Salts—Salts are necessary in digestion and in every step of metabolism, from absorption to secretion and

TABLE 6—FAT CONTENT OF MILK OF VARIOUS HERDS

Breed	Fat Percentage
Holstein Friesian	3.26
Ayrshire	3.76
American Holderness	4.01
Shorthorn	4.28
Devon	4.69
Guernsey	5.38
Jersey	5.78

excretion. The role of salts in both normal and pathologic conditions has assumed increased importance under the investigative studies of the last few years.

Human milk contains 0.2 gm. of ash in 100 cc., and cow's milk 0.75 gm. The difference in percentage in human and in cow's milk is equalized, as the body uses only what is necessary for its life and growth.

All the salts except those of iron are in larger amounts in cow's than in human milk. Cow's milk contains relatively a very large amount of calcium phosphate, while the amount of iron in cow's milk is less than that in human milk. Human and cow's milk differ greatly in the form of the phosphorus content.

17 Van Slyke and Publow, quoted by Heinemann (Footnote 2).

In human milk, three quarters of the phosphorus is in organic combination, while in cow's milk only one quarter is so combined. Neither in human nor in cow's milk is the iron content sufficient to meet the demands in the first year of life, the infant must depend on the iron stored during the fetal life.

The percentages and grams of the different salts of human and cow's milk, as found in 100 parts of ash, are given in Table 7

TABLE 7—SALTS OF HUMAN AND OF COWS MILK

AVERAGE PERCENTAGES OF DIFFERENT SALTS IN THE ASH							
	CaO	MgO	P ₂ O ₅	Na O	K ₂ O	Cl	Fe
Human milk	23.3	3.7	16.6	7.2	28.3	16.5	0.00015*
Cows milk	23.5	2.8	26.5	7.2	24.9	13.6	0.00007*

GRAMS OF SALTS FOR EACH HUNDRED CUBIC CENTIMETERS OF MILK							
	CaO	MgO	P O ₆	Na O	K ₂ O	Cl	Fe
Human milk	0.0458	0.0074	0.0345	0.0132	0.0609	0.0358	0.00017*
Cows milk	0.172	0.02	0.2437	0.0465	0.1885	0.082	0.00007†

* Holt L E Courtney, A M, and Fales H L A Chemical Study of Woman's Milk Especially Its Inorganic Constituents *Am J Dis Child* 10 229 (Oct) 1915

In all the constituents except phosphorus pentoxide and iron, the percentages of the different salts in the two milks are practically the same. The higher proportion of phosphorus in cow's milk is due to the large amount of casein. While the *proportion* of salts in cow's milk is nearly the same as in human milk, the *amount* is about three times as great. Unless, therefore, cow's milk has been diluted with more than twice its volume, these inorganic constituents are furnished to the infant in *equal proportion* to that in human milk (Holt). Human milk contains about twice as much iron as cow's milk, and dilution of cow's milk results in a decrease in the iron content which must not be carried too far unless supplemented by other iron-containing food.

Ferments—Cow's milk contains a number of ferments, but little is known of their value to the infant. Escherich and Hamburger thought that they had a favorable influence on the processes of metabolism. Salge discovered that tetanus and diphtheria antitoxins could be utilized by the infant only when found in human milk, while when contained in the milk of other species they did not get into the body fluids.

Vitamins—Cow's milk contains fat-soluble A in considerable quantity, and water soluble B and C in lesser amounts

Bacterial Content—The bacteria of cow's milk vary in kind and number, depending on the conditions under which the milk is collected, preserved and handled. While human milk may be either sterile or have a low bacterial content, cow's milk is never sterile, and on a too frequently, through carelessness, the original flora multiply rapidly. Certified, pasteurized and sterilized milk was the practical outcome of the efforts made to obtain germ-free milk for infant feeding.

The harmful or undesirable micro-organisms occurring in milk are of two classes (1) Those which are definitely pathogenic and capable of producing a serious disease. Examples are the typhoid bacilli, the typhoid groups, the tubercle bacilli, the virus of smallpox and *Bacillus abortus*¹⁸ (2) Saprophytic bacteria, some of which decompose milk and others which are capable of causing gastro-intestinal disturbances.

Of the nonpathogenic organisms, those most frequently found are the lactic acid-producing bacteria. The most common types are *Streptococcus lactis*, *Bacillus lactis-acidi*, *B. Lactis-aerogenes*, *B. bulgaricus*, *B. acidophilus* and *B. bifidus*. The micro-organisms producing only lactic acid are mostly harmless, and the lactic acid itself in the amounts produced in milk does not cause diarrhea when fed. In fact, the production of lactic acid leads to the destruction of many of the more harmful varieties of bacteria in milk.

The butyric acid group is also frequently present. This group produces butyric acid by its action on sugar and fat. Another group frequently found in milk are the proteolytic bacteria, which coagulate the milk and may cause a further splitting of the protein. *Bacillus coli* which, as well as others, has the property of producing lactic acid, *B. proteus*, *B. alkaligenes*, the hay bacillus, *B. aerogenes-capsulatus* and others belong to this group. Most of the latter are sporebearing.

Slime-forming bacteria occasionally invade the milk. Among the most tenacious of these is *B. lactis-viscosus*. *Streptococcus lacticus* occasionally causes similar changes. At times the milk becomes bitter, because of the formation of peptones by contaminating organisms. Certain vegetables and plants may cause a similar taste in the milk. Occasionally a milk of reddish color is seen. This may be due to blood from the udder, or to the action of *B. prodigiosus*. A blue milk is even more common, and is due to *B. cyanogenes*. Protein and carbohydrate splitting yeasts and molds not infrequently invade the milk and cause changes that become more evident as the milk grows older.

(To be continued)

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN
AS CONFORMING TO THE BY-LAWS OF THE COUNCIL ON PHARMACY
AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION
ADMISSION TO AND THE NON-EXERCISE OF THE RIGHT
THE RULES OF THE COUNCIL BASED UPON ITS ACTING
SENT ON APRIL 1904
W. A. PUGH, SECRETARY

W. A. PUGH, Secy.

DIPHTHERIA IMMUNITY TEST (See Verbal Record of Remedies)

P. / / / Co Detroit
P. / / / Co S.
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[illegible]

18 Fleischner E C and Meyer K E
in Certified Milk Am J Dis Child 14: 11

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - CHICAGO, ILL.

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SATURDAY, FEBRUARY 17, 1923

THE DISTRIBUTION OF METABOLITES IN THE BODY

In a recent essay on the nonprotein nitrogen of the blood in health and in disease, Folin¹ remarked that the reasoning power of the earlier clinical investigators of the blood was necessarily much superior to their analytic skill or their meager laboratory facilities. Furthermore, their analytic data could have been little more than mere ornaments attached to good, logical conclusions. Nevertheless, as Folin points out, the correctness of the concept that waste products must accumulate in the blood when the kidneys fail to perform their function in the formation of urine was established as early as 1821, when Prevost and Dumas showed that extirpation of the kidneys was followed by a gradual increase of the urea content of the blood—a finding repeatedly verified by investigators since that time.

Logic and correct guesses are now being supplanted by accurate analytic observations in the chemical study of the blood, a procedure that is already destined to become a part of the routine of the medical clinic. As an outcome of what has already been ascertained from numerous analyses, it is evident that certain constituents, such as sugar, urea, creatinin and uric acid which can now be estimated on small samples of blood, are present in the circulation during health in relatively constant and fixed proportions, whereas they are subject to decided changes in concentration in certain diseased states in which they may actually become indicative of the pathologic situation. Whether or not these fluctuations are reflected in changed concentration of metabolites in the tissues also has been ascertained for a few of the substances. There is no doubt that the readily soluble and diffusible urea penetrates speedily to all parts of the body. Recently Rypins² of the Department of Medicine at the University of Minnesota has made new comparisons of the distribution of metabolites between the blood and other

body fluids. Although his studies with ingested urea indicate that during the period of its elimination there is no constant parallelism in the concentration of nitrogenous metabolites of the blood and tissues, both the estimation of the body fluid metabolites and the comparison of metabolites in the blood and tissues strongly suggest a tendency to equilibrium throughout the organism. Thus, Rypins adds, does not necessarily mean that a normal concentration of metabolites in the tissues approximates that in the blood, it means that the metabolites are distributed between them in a fairly constant proportion, and that an increase in one is paralleled by a proportionate increase in the other. No characteristic difference in the metabolite concentration of exudates and transudates was observed. In cases in which the blood metabolite level was increased, the metabolite concentration in the fluids varied *pari passu* with the changes in the blood. Pending the contribution of contradictory evidence, it may be tentatively concluded, therefore, that the facts secured by chemical analysis of the blood give an index of the concentration of metabolites throughout the body.

SEASONAL VARIABILITY OF DISEASE

It is well known that the frequency, severity and mortality of many diseases vary with different seasons of the year. That acute respiratory infections reach a peak in the late winter months, with a minor peak in the late autumn, is attributed to a lowered local resistance to infection with the unknown virus of "common colds" and the known pathogenic cocci, although as yet we have no satisfactory explanation as to why the exposure to cold lowers the resistance. To be sure, a physical chemist, Schade, would attribute to a decreased dispersion of the tissue colloids on cooling the increased vulnerability to bacteria, but this is pure hypothesis and does not explain how the invading bacteria fail to suffer a correspondingly reduced activity when chilled. In the lower animals, seasonal changes in metabolism are well recognized, such as the hibernation of some species, and the seasonal variation in reproductive activity, as well as the variations in growth of hair, feathers and antlers. Beckmann,¹ in a consideration of the effect of season on disease, attributes the absence of such marked seasonal alterations in man to the fact that with higher development comes a better regulating mechanism against extraneous influences. But even in man there are distinct alterations in metabolic activity at different times of the year. Thus, measurements have shown that in spring the hair grows more rapidly than at other times, while body activity as a whole is lessened in winter, so that the usual amount of time spent in sleep is much increased over the summer sleep among people not too artificially regulated by customs and alarm clocks.

1. Folin, O. to Non Protein Nitrogen of Blood in Health and Disease. *Physiol. Rev.* 2: 60 (July) 1922.
2. Rypins, Harold. The Distribution of Metabolites in the Blood and Tissues. *Arch. Int. Med.* 30: 578 (Nov.) 1922.

1. Beckmann, Kurt. Jahresschwankungen in der menschlichen Physiologie und Pathologie. *Deutsch. med. Wchnschr.* 48: 1409 (Oct. 20) 1922.

Presumably this is related to hibernation in other species. It is said that pulse rate, temperature and respiration are highest in winter, and recently it has been found that the height of the capacity of the blood to bind carbon dioxide is reached with the shortest days of the year. In the spring there is a distinct fall in the carbon dioxide tension of the blood, which implies a decrease in the alkali reserve.

Although these variations are exceedingly small, they gain in the possibility of significance through the fact that they appear at the time of year when most diseases of seasonal variability are making themselves manifest, excluding diseases dependent on such obviously seasonal matters as insect transmission and food supply. Perhaps the reaction change has some influence on the endocrine glands, for there is not a little evidence that hibernation depends on these organs, and the same thing is true of some of the noninfectious diseases that show seasonal variations. For example, Moro found that the incidence of juvenile tetany increases in January and February, rising to a peak in March, and falling nearly to zero in the summer. The galvanic irritability follows a similar curve, and in guinea-pigs a seasonal variation has been found in respect to their sensitiveness to caffeine. These facts may be related to the statistical evidence that mental stability may show a seasonal change, for the suicide curve is said to rise in the spring, with a maximum in May or June, in various parts of Europe, despite marked variations in climate. Other mental disturbances follow a similar curve, but in some types with a second rise in the autumn. Hyperchlorhydria is said to show a distinct rise in the spring and autumn, and hyperthyroidism has been placed among the conditions that show such a double curve. The seasonal character of some diseases, such as rickets and certain cutaneous disorders, is explainable on a basis of altered sunlight, with others, the dietary variations are probably responsible. Less clear are those conditions that exhibit a frequency peak in both spring and autumn, among which, besides those mentioned above, Rusznyák² lists not only the acute respiratory and throat infections, but also tuberculosis, nephritis and rheumatism, as well as the neuroses, which often have a higher peak in autumn than in spring. This author suggests that the change from winter to summer, or from summer to winter, arouses an adaptive mechanism, the activity of which produces a condition of instability during these transition periods, and hence pathologic conditions become more conspicuous until seasonal adjustment is completed. As yet there can be said to be no approach to a solution of these problems, which so far have not received much consideration as the important factor in human disease which they apparently are. Evidently, in large part, they depend on external influences, but their periodicity does not always correspond to these, and therefore it is probable that some internal influence

also is involved, as in the hibernating animals, which do not awake completely if brought into a summer temperature, but continue for some time to manifest the lowered metabolic activity that characterizes their sleeping period.

PROPOSED LEGISLATION REDUCING FEDERAL NARCOTIC TAX

Through the efforts of the Bureau of Legal Medicine and Legislation of the American Medical Association, and with the cooperation of Dr. John J. Kindred, a fellow of the Association and the representative in Congress from the Second New York Congressional District, a bill has been introduced for the reduction of the tax imposed on physicians and certain related professional groups by the Revenue Act of 1918, to the merely nominal amount, one dollar a year, originally provided in the Harrison Narcotic Law.

The Harrison Narcotic Law was enacted in the discharge of international obligations the United States government had assumed, looking toward the control of the traffic in habit-forming drugs. It took the form of a tax measure, not because of any intention on the part of the government to make the traffic in such drugs a source of revenue, but because in no other way could the federal government obtain the control it had obligated itself to assume. In the execution of the project, it became necessary to obtain jurisdiction over the physician, as one of the agencies through which habit-forming drugs are distributed, and for that purpose alone a nominal tax was imposed. To this, no objection was raised, it was looked on by the profession as a step necessary in the fulfillment of an international obligation, and was accepted accordingly.

When the Revenue Act of 1918 was framed, the United States had incurred a large indebtedness on account of the World War. New sources of revenue were being sought, and taxes already established were being increased, and in the course of its search for increased income, Congress amended the Harrison Narcotic Law, and trebled the tax. Then the tax ceased to be a mere incident to the discharge of certain police duties voluntarily assumed by the federal government, and became nothing more or less than an occupation tax. There was no more reason for imposing an occupation tax on the physician than for imposing such a tax on the lawyer, the architect, and on other professional and vocational groups except that opportunity was given through the tax already imposed. But it was a war-time measure and the medical profession, which as a body had probably already contributed proportionately more of its resources to the country's defense than had any other group, hesitated to enter complaint.

The war has been over now for more than four years, and during that time the Revenue Act of 1918 has been revised. Still the three dollar tax is being collected, and it will be collected until Congress other-

² Rusznyák, Stefan. Krankheiten und Jahreszeiten. Wien. Arch. f. inn. Med. 3: 379, 1922.

wise directs On the face of the law, the tax is small, in the aggregate, it is not The records of the Treasury Department do not permit a statement of the amount paid by physicians alone, but from the medical group—comprising physicians, dentists and others engaged in the practice of the healing arts—and from hospitals, in the fiscal year 1922 there was collected \$573,413.84

The imposition of this tax on the practice of medicine cannot be justified on the ground that the revenue is necessary to pay the cost of enforcing the law The law is for the general good, and there is no reason why the physician should defray any greater share of the cost of enforcement than is paid by others Moreover, the taxes collected under the law are largely in excess of the amount expended for its enforcement, for the amount collected during the fiscal year 1922, from all sources, was, according to the annual report of the Commissioner of Internal Revenue, \$1,269,039.90, and the cost of enforcing the act was but \$658,728.77 Even if a liberal allowance is made for overhead and incidental expenses of enforcement, not included in the cost as officially stated, it seems safe to say that the United States, during the fiscal year 1922, under the Harrison Narcotic Law alone and to the exclusion of all receipts from customs revenues on narcotic drugs, realized a half million dollars net profit

On no sound, discoverable basis can the present tax of three dollars a year on physicians, under the amended Harrison Narcotic Law, be justified To the extent that the tax is in excess of the minimum necessary to give the federal government jurisdiction over the physician as an agency engaged in the distribution of habit-forming drugs, it is an occupation tax, unjustly discriminating against the medical profession and the allied groups subjected to its exactions It is for the physicians of the country to see that the tax is discontinued, or at least reduced to the amount named in the original law, one dollar a year if not by this Congress, then by the next

DAVID HARUM MONUMENT TO A PHYSICIAN

One of the literary events of the year, the celebration of the twenty-fifth anniversary of the publication of "David Harum," one of the most popular novels of the last century, has a particular interest for physicians Its author was the son of a physician, indeed, the quaint character David Harum was a reflection of Dr. Amos Westcott, the author's father Dr. Westcott was well known as a physician as well as one of the most conspicuous citizens of Syracuse, N. Y., during the mid-nineteenth century Incidentally, he was the honored and respected mayor of that city during part of the Civil War Moreover, Edward Noyes Westcott wrote the book while dying of tuberculosis, and would probably never have had the chance to demonstrate the fact that he had the literary power that he possessed except for the enforced leisure that his disease com-

pelled him to take He had previously been a teller in a bank When he had to give up work and live outside, he had much time for thought, and the book "David Harum" shaped itself in his mind In spite of the suffering from laryngeal tuberculosis, which complicated his lung condition and which must have added greatly to the difficulty of writing, he succeeded in getting the manuscript written

The fact that the book was different, which eventually gave it widespread popularity and immense sale, proved a handicap as regards its acceptance The manuscript was sent to publisher after publisher, who refused it, usually with a formal note of declination It is easy to understand how discouraging this must have been for a man who knew that he was seriously ill, and who, in spite of the hopeful attitude, *spes phthisica*, characteristic of his affection, must have had more than an inkling of the fact that his end was probably not far off Undaunted, he kept on readdressing the manuscript, giving it certain touches at each new rejection, and finally, in January, 1898, it was accepted by Appleton The cordial words of praise which accompanied the acceptance of the manuscript proved a wonderful tonic As the author himself said, "They were more welcome than any gift I could have received" It is not surprising that just after this his health seemed to improve, though he was in the last stages of the disease, and the laryngeal complication was making life miserable

He died without having seen a copy of his book in print His friend and biographer, Forbes Heermans, commenting on the possibility that Westcott did not in any way even suspect the wonderful popularity that "David Harum" was to have, cannot help but find a hint of his hopes with regard to it from certain passages in the book itself He knew enough about life, however, to appreciate thoroughly that romantic anticipations are seldom realized, and that life has at least as many disappointments as fortunate events Not a few of these are due to the fact that the good things of life do not come in on time As his biographer said, "Yet when we read in Chapter XLVII his own words 'Many of the disappointments of life, if not the greater part, come because events are unpunctual, they have a way of arriving sometimes too early, or worse, too late', their pathetic significance is now profoundly impressive"

Even had his book never been published, it is probable that it would have been well worth while for Edward Westcott to write it No one, probably, would have appreciated this fact better than did the author of "David Harum," for it was his memories of his father, the old-fashioned physician whose patients were his friends and neighbors and whose knowledge of human nature was almost more valuable to him in his practice than his knowledge of medical science, that he recalled for the book Contact with that father physician must have made the author of "David Harum" realize clearly the value of not allowing the "blue devils" of discouragement to add to his discomfort, decrease his resistive

vitality, and make life much more miserable than even his disease was making it. The author wrote to his publishers, "I have lived with and among the people I have written about. My father was 'born and raised' on Buxton Hill, and a great many of David's peculiar figures and sayings were constantly popping out in my father's diction."

It is this that would make "David Harum" worth the reading by the modern physician now after twenty-five years. Many of the expressions used by the hero smack of the old-fashioned country practitioner whose wisdom so often enabled him to do so much more in his duties as a physician to his patients, than the knowledge of the modern, ever so much better educated scientific physician of our day helps him to accomplish. "Knowledge comes, but wisdom lingers." His wisdom enabled old Dr. Westcott to perform very satisfactorily the three duties dependent on a physician, to cure whenever he could, though that might be rarely enough, to relieve nearly always, even with the meager means at his command, but to console always and give his patients new spirit and vital resistance. As a result of this there are some interesting anticipations of ideas in medicine that are supposed to be the latest things in practice.

Typical examples are not hard to find. David Harum's expression, "You want to change your feed once in a while or you may git the colic," is one instance. It pleads for variety in diet quite as strongly as the modern expert in physiologic chemistry would insist on it. One can just imagine the old country doctor who might not have known very well what was meant by psychotherapy and might have shied at mental suggestion or the necessity for diversion of attention, but who felt in his bones as the result of experience that "A reasonable amount of fleas is good fer a dog—keeps 'em from broodin' over bein' a dog, mebbe." Only the doctor habit of mind would have supplied such a figure as that contained in his reference to his step-mother: "'T wa'n't so much slappin' an' cuffin' with her as 't was tongue. She c'd say things that'd just raise a blister like pizen ivy." Surely the physician who had had large experience among the poor would be the one above all to formulate that ancient biblical expression in such modern familiar language as brings it home to every one, "Them that has, gits."

The last, but not the least interesting, feature for physicians is that of course his old-fashioned physician father left him no money to speak of, and whatever little savings had been made from the moderate salary of a bank teller in those days were exhausted by the lingering illness and the necessity for special care with its attendant expense. He left his family little at his death, but the sale of his book proved a continued source of income that put them in independent circumstances.¹

¹ The book still sells rather well and the publishers are bringing out an illustrated edition this year for the twenty-fifth anniversary which will doubtless add distinctly to the sales record though some 1,500,000 copies have been sold.

' *Current Comment*

THE VISIT OF M. COUE

Emile Coue, druggist of Nancy, France, has come and gone, heralded and accompanied by a campaign of advertising which has rarely been equaled, making promises of hope to the helpless and afflicted. His visit to Chicago gave the opportunity to hear M. Coue and to observe his methods. The man himself gave an impression of sincere, though naive, earnestness. He seemed childishly pleased with the testimonials he had received, and genuinely convinced that he had made a discovery of great benefit to mankind. Of the many cults that have grown up around such methods of healing, this appears to be the first that has not been erected on a religious basis with more or less specific claims of Divine inspiration and a lack of the mystical which will probably result in speedy oblivion. Coue was careful to insist that he is not "a healer" or "miracle worker," and protested against the demands that he exhibit his powers, demands that were an inevitable result of the publicity he has received. M. Coue claimed that much of human suffering and disability is psychic in origin, the outcome of faulty thinking. All that is necessary for its relief is a change in the mode of thought. This can be achieved by the persistent and insistent repetition of a formula, which disavows the trouble. He acknowledged that some things cannot be changed, as for example the loss of a leg, and that it is useless to attempt "the impossible." However, despite the protestations that he will not attempt "the impossible," Coue frequently finds it "impossible" only when he fails. One of the patients subjected to "treatment" at the Chicago meetings was an elderly woman, emaciated, feeble, short of breath, and with every appearance of cardiovascular disease. This poor woman was urged, stimulated and encouraged to walk vigorously, even to run. Under the stimulus of the excitement, she succeeded temporarily by the exercise of every reserve of energy, and after having served the purpose of this ruthless demonstration, retired from view, to sink panting and exhausted in a chair. No more serious result was evident, but risks had certainly been taken without thought to the possible dangers, which were obvious to any physician. The atmosphere of the Coue demonstration contained much to recall the vaudeville hypnotist, now almost extinct, the magic words, the mesmeric passes and even the old parlor trick of suggesting to members of the audience that they could not separate their hands, after they had pressed them tightly together, all bring back memories of the professional hypnotist. Had it not been for the pathetic background of the crippled, deformed and disappointment-doomed dupes that filled the stage, the scene would have been humorous. The methods and theory with which Coue works are as old as history. Nancy, the town from which he came was the home of a school of scientific hypnotism under the leadership of Liebeault and Bernheim which was famous in the sixth and subsequent decades of the last century. It is an error to assume that physicians have ignored such merits as do underlie the abrupt relief of hysterical symptoms.

and persuasion is a commonplace in the practice of the average physician. Suggestion has a distinct place in therapeutics, unconsciously, it is used by every successful physician in the form of encouragement and optimistic prediction. It is the basis of Eddyism. But suggestion, while it may, and often does, give temporary relief, does not cure, it must be accompanied by investigation and remedy of the underlying causes, whether psychic or physical.

THE WEIGHT OF CHILDREN

At present, it would assuredly be a rash venture to attempt to set up what might be called ideal standards of nutrition in children of school age. The child welfare programs involve the acceptance of some index of physiologic well-being, but the experts are not yet in accord as to how the latter shall be formulated. Without debating the wisdom or accuracy of the procedure, it must be admitted that the factor most generally used today is the weight of a given child compared with the average weight of children of the same sex, age and height, allowing 7 to 10 per cent deviation from this standard as normal variation. Children below this standard are classed as underweight and presumably as not physically fit. Weight is so easily measured, and its fluctuations can so readily be grasped, that it has naturally been used as a guide to hygienic procedures and corrective measures.¹ The field investigations in child hygiene conducted by the U. S. Public Health Service² on nearly 10,000 schoolchildren from 6 to 16 years of age, inclusive, in South Carolina, Virginia, Maryland, Delaware and New York State indicate some of the limitations which the estimate of physical fitness involves. They show that although, on the average, the children of poorer nutrition weigh less than those of better nutrition, weight alone does not seem to be sufficient for determining the nutrition of a given child. In order to pick out individual cases of poor nutrition, a physical examination by a trained physician should supplement physical measurements. The observations of the government experts indicate that the percentage of children who were "fair" or "poor" in nutrition, as judged from clinical evidence, varied with age, increasing in the 6 to 8 age groups and then declining in succeeding age groups. No significant difference in this respect appeared between boys and girls. The percentage of children who were underweight (10 per cent below) and the percentage who were overweight (20 per cent above), as judged by Wood's table of weight for sex, age and height, increased as age increased through the fourteenth year for girls and through the sixteenth year for boys. Girls showed a constantly higher percentage of underweight and a consistently higher percentage of overweight than boys. If average weight is to be used as even a rough index of nutrition, it seems that the percentage deviation allowed for normal variation from the average should vary for different sexes and ages rather than be a constant 7 or 10 per cent, as usually employed in school health work.

¹ See for example the program of the Bureau of Educational Experiments in Hunt, J. L., Johnson, B. J. and Lincoln, E. M., *Health Education and the Nutrition Class*, New York: E. P. Dutton & Co., 1921.
² Clark, Taliaferro, Sydenhacker, Edgar, and Collins, S. D., *Weight and Height as an Index of Nutrition*, *Pub. Health Rep.* 38: 39 (Jan. 12) 1923.

Association News

BOARD OF TRUSTEES

Minutes of a Special Meeting Held at the Association Headquarters, Thursday, February 1, and of the Regular Annual Meeting Held Friday, Feb. 2, 1923

The meeting was called to order at 10:30 a. m. There were present Drs. Dowling (Chairman), Billings, McDavitt, Mitchell, Phillips, Brown, Williamson, Richardson and Sarles of the Board, the President, Dr. George E. de Schweinitz, the President-Elect, Dr. Ray Lyman Wilbur, the Speaker, Dr. Frederick Warnshuis, the Treasurer, Dr. Austin Hayden, the Secretary, Dr. Olin West, and the Editor and General Manager, Dr. George H. Simmons.

The Chairman announced that a special meeting was called the day preceding the annual session of the Board to afford sufficient time for the consideration of the annual report of the General Manager for the year 1922 and of other business, and to make a general inspection of the work and requirements of the headquarters and the new additions to the building.

The General Manager presented his annual report, which was accepted by the Board with the understanding that those parts including recommendations which require the action of the Board shall be referred to the appropriate committees for consideration and report to the Board on February 2, the date of the annual meeting.

The Chairman appointed Drs. Phillips, Williamson and Richardson a Committee on Elections to fill vacancies on the Council on Pharmacy and Chemistry and on the editorial boards of the special journals.

The General Manager, in his annual report, recommended that at the end of the current year the annual dues and subscription be restored to the former price—\$5. The Board decided to incorporate this recommendation in its annual report to the House of Delegates.

MEMORIAL TABLETS

Dr. George E. de Schweinitz, chairman of the Special Committee on Memorial Tablets, presented a report which was signed by all members of the Committee. Inasmuch as the Committee expressed the opinion that a memorial tablet naturally would be placed in the assembly room of the new addition to the building, the Committee requested its report to be considered one of progress. The report of the Committee was ordered received, with the understanding that the Board will include in its annual report to the House of Delegates a statement to the effect that arrangements have been made to fulfill the request made by the House to establish at headquarters a suitable memorial tablet to the late Dr. Joseph N. McCormack, but that it will be necessary to postpone its placement until the new addition to the headquarters shall have been completed.

GROUP INSURANCE

The question of applying industrial group insurance to the employees of the Association at headquarters, the expense to be borne by the Association, was discussed. The general plan was referred to the Finance Committee for further investigation and study. The fact was brought out that the Association has 320 employees at headquarters, forty-six of whom have been with the Association for from ten to twenty-five years.

REPORT OF THE COMMITTEE ON ELECTIONS

The committee recommended the following named individuals to succeed themselves on the Editorial Boards of the special journals, in which the Board concurred:

Dr. W. S. Thayer, *Archives of Internal Medicine*
Dr. H. F. Helmholtz, *American Journal of Diseases of Children*
Dr. T. H. Weisenburg, *Archives of Neurology and Psychiatry*
Dr. W. T. Corlett, *Archives of Dermatology and Syphilology*
Dr. Hugh Cabot, *Archives of Surgery*

Drs R A Hatcher of New York and W T Longcope of Baltimore were elected to succeed themselves, as members of the Council on Pharmacy and Chemistry, and Dr A N Richards of Philadelphia was elected to succeed Dr Hewlett of San Francisco, who expressed the desire that he be not reelected

BUREAU OF LEGAL MEDICINE AND LEGISLATION

Dr Woodward, the Executive Secretary of the Bureau, made a report covering the work done since the organization of the Bureau. The report covered the following subjects: the availability of bottled-in-bond whisky for therapeutic purposes, protest against regulations governing therapeutic use of whisky, probationary period for physicians in new locality before permission is given to prescribe whisky therapeutically, reduction of tax under the Harrison law, amendments to narcotic regulations, safeguarding professional secrecy, liability of state medical associations for federal income tax upon accumulated funds, deductibility by physicians of expenses incident to attending medical meetings, the status of legislation on animal experimentation, present status of chiropractic training of disabled veterans under the federal Veterans' Bureau, reclassification bill for physicians in the Indian service, reorganization of federal health activities, medical defense, cooperation of the Bureau with constituent associations, meetings of state legislatures, etc.

The report of Dr Woodward was fully discussed and ordered placed on file. Dr Woodward was unanimously commended on the good work accomplished.

AMERICAN RED CROSS

The Secretary of the Board announced the present membership of the Medical Advisory Committee of the American Red Cross as appointed by the Chairman of the Central Committee of that organization: Drs William H Welch (Chairman), Baltimore, Herman M Biggs, Albany, Thomas S Cullen, Baltimore, Hugh S Cumming, Washington, Livingston Farrand, Utica, Franklin H Martin, Chicago, Fred B Lund, Boston, George M Piersol, Philadelphia, John H J Upham, Columbus, Ohio, and C E A Winslow, New Haven. The Board was informed that the Advisory Committee was at present engaged in the formulation of a proposed public health program for the American Red Cross.

HYGEIA

Dr Victor C Vaughan, Editor of *Hygeia*, made a report of progress, which was unanimously approved by the Board.

SCIENTIFIC EXHIBIT

Dr D Chester Brown, chairman of the Committee of the Board on Scientific Exhibit, and Dr Leech, who has charge of the Bureau on Scientific Exhibit at headquarters, presented a report on the arrangements made for the Scientific Exhibit, including the lantern slide moving picture theater for the San Francisco session. There was every indication of close cooperation of the sections on scientific work with the Scientific Exhibit. This report was received and approved.

DIAGNOSTIC CLINICS AT THE SAN FRANCISCO SESSION

The Secretary of the Board reported that arrangements had been completed with the Local Committee of Arrangements for the San Francisco session for diagnostic clinics to be given on Monday and Tuesday, June 25 and 26. The tentative plans called for seventy-two clinics in twelve hospitals of San Francisco and Oakland during the two days. California clinicians will give one half of the clinics, and visiting clinicians from various states, and possibly from abroad, will give one half.

HEALTH EXHIBIT

Dr D Chester Brown made a further report upon the proposition to hold a health exhibit at San Francisco during the annual session. This subject had been discussed at the meeting of the Board held in November last, and at this time more definite information upon the subject influenced the Board to decide not to attempt a health exhibit at San Francisco, and that the subject of health exhibits at future sessions of the Association be referred to the Council on Health

and Public Instruction with the Board's approval for instituting health exhibits as a part of its work.

The Board adjourned at 6 15 p m to meet at 9 a m Friday, February 2.

The Annual Meeting of the Board of Trustees

The annual meeting of the Board of Trustees was called to order at 9 a m, February 2, by the chairman Dr Dowling. There were present all members of the Board, the President, the President-Elect, the Speaker of the House, Treasurer, the Editor and General Manager, and the Secretary of the Association.

The minutes of the special meeting held on Thursday, February 1, were read and by resolution all of the business performed and decisions made by the Board at the special meeting on February 1 were made official as of this date.

ABSTRACTING REPORTS CONTAINED IN THE HANDBOOK FOR PRESENTATION TO THE HOUSE OF DELEGATES

The Secretary of the Board called attention to the feasibility, practicability and economy of time which would be gained by abstracting or condensing the official reports of the Councils and other committees and of the Board of Trustees which are printed in full in the Handbook, so that the salient features and recommendations contained in the several reports may be presented more effectively to the House of Delegates. In this connection, attention was called to the fact that last year the printed Handbook was completed and forwarded to all officers, all known members of the House of Delegates, section officers and others from two to three weeks before the date of the meeting of the annual session in St Louis. This year the Handbook will be placed in the hands of these officers from two to three weeks before the annual session at San Francisco. This will enable every holdover member of the House of Delegates and every newly elected delegate whose address is forwarded to Association headquarters in time to permit a copy to be mailed to him to acquaint himself with the business of the Association as represented in the reports contained in the Handbook.

The Board unanimously approved of the adoption of abstracting reports contained in the Handbook for presentation to the House of Delegates.

The Speaker announced that he had addressed a letter to each member of the House of Delegates asking for constructive criticism, suggestions or recommendations regarding the methods of carrying on the business of the House and other details. In connection with this statement he suggested that the Board empower the Executive Committee to cooperate with the Secretary and other officers of the Association to collect and bring outstanding valuable suggestions received from these sources into practical application at the San Francisco meeting. The Board unanimously concurred in the request of the Speaker.

The usual appropriations were made.

The Board adjourned to meet at the Palace Hotel in San Francisco on Saturday afternoon, June 23.

FRANK BILLINGS, Secretary

THE SAN FRANCISCO SESSION

Convention Diagnostic Clinics and Postconvention Diagnostic Clinics

A resolution governing the selection and conduct of diagnostic clinics was unanimously passed at the regular meeting of the Central Committee of Arrangements, Jan 22 1923. The resolution was as follows:

Having heard read the correspondence between Dr Frank Billings, secretary of the Trustees American Medical Association and Dr W E Musgrave, chairman of the California Committee of the American Medical Association Convention regarding diagnostic clinics to be held in San Francisco and Oakland, June 24 and 25, to be known as Convention Diagnostic Clinics, and in Los Angeles and other sections of California, July 2 and 3, to be known as postconvention clinics, the Central Committee unanimously approved plan of conducting said clinics and

outlined for these clinics, submitted by the general chairman, Dr W E Musgrave

1 The chairman of the committee, after consultation with the accredited hospitals or with county medical societies, will appoint a sub-subcommittee on Diagnostic Clinics for each hospital, accredited by the Council on Medical Education and Hospitals of the American Medical Association, of San Francisco, Oakland, Los Angeles and other cities of California which comply with the conditions governing these diagnostic clinics

2 Each of these sub-subcommittees shall consist of three members of the staff, one representative of the directorate and one of the administration of the hospital. A staff member shall be chairman

3 The chairman of all these sub-subcommittees shall form ex-officio the Subcommittee on Diagnostic Clinics. The chairman of the Central Committee shall appoint a chairman of the subcommittee, who shall thereby become ex-officio a member of the Central Committee

4 The Subcommittee on Diagnostic Clinics, working through the Executive Committee, shall cooperate with the Trustees of the American Medical Association in conducting diagnostic clinics in connection with the American Medical Association Convention under the following procedure

(a) The hours from 10 a m to 1 p m of Monday and Tuesday, June 24 and 25, shall be designated Convention Diagnostic Clinic Periods in each of the cooperating hospitals in San Francisco and Oakland

(b) The same hours on the following Monday and Tuesday, July 2 and 3, shall be Postconvention Diagnostic Clinic Periods for the cooperating hospitals in Los Angeles and other sections of California

(c) The Diagnostic Clinic Period in each hospital shall be divided into three clinics of one hour each

(d) One clinic will be conducted by a member of the California Medical Association, one by an invited Fellow of the American Medical Association, and one will be a combined clinic given by a California physician and a visiting Fellow

(e) The California physicians giving clinics shall be selected by the sub-subcommittee from each hospital and appointed by the chairman of the Central Committee

(f) All visiting Fellows giving clinics shall be approved by the Trustees of the American Medical Association. The sub-subcommittees of the cooperating hospitals may correspond with the secretary of the Trustees of the American Medical Association in securing visiting Fellows whom they desire to have conduct clinics for their hospitals

(g) The program of the various clinics shall be prepared with proper regard for available facilities, the wishes of the local committee of each hospital and the desires of the Trustees of the American Medical Association

(h) The preparation of the program, arrangements with physicians to conduct it, securing an audience and all local arrangements, conveniences and facilities to insure the success of each clinic, are responsibilities of each hospital committee. The facilities of headquarters are open to all committees

(i) County societies and other approved medical organizations in any part of California, and Fellows of the American Medical Association who desire to participate in the Convention Diagnostic Clinics of June 24 and 25 or the Postconvention Diagnostic Clinics of July 2 and 3, are invited and urged to communicate with California Convention Headquarters of the American Medical Association, 805-809 Balboa Building, San Francisco

Gumma of Heart—Gummata of the heart are probably much more frequent than even many pathologists think, probably for the reason that they are usually of relatively small size. Diffuse areas of extensive fibrosis may have been originated as a gumma which had absorbed to some degree under healthy condition or as a result of a certain degree of treatment for the specific infection and that the resulting fibrosis really in some instances represents a resorbing or healing process.—Harlow Brooks, *Am J Syphilis* 5 224, 1921

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARIZONA

Ground for Hospital Broken—Ground was broken recently for the new city isolation hospital to be erected in Tucson at a cost of approximately \$18,000. The new building will accommodate from sixty to seventy patients

CALIFORNIA

Summer Work at Stanford University—From July 1 to October 1, properly qualified graduates in medicine and surgery, either graduates of Stanford University or of other schools, are invited to participate in medical and surgical work, including specialties, in the capacity of special workers at Stanford University Medical School, San Francisco. The workers will be expected to assist in the diagnosis and treatment of disease in the outpatient departments, laboratories and wards. Opportunity to make special studies of clinical and laboratory problems will be offered in certain subjects. The minimum period of attendance will be four weeks and a registration fee of three dollars will be charged. Applications, which should give an outline of the medical experience of the applicant, should be sent to the Dean, 2398 Sacramento Street, San Francisco, before June 1

CONNECTICUT

Personal—Prof George C Whipple, Harvard University, New Haven, gave four lectures on "The Philosophy of Sanitation," January 6, 13, 20 and 27, at the Wagner Free Institute of Science.—Prof Marston T Bogert, professor of chemistry at Columbia University, New York, gave a lecture at the Connecticut College for Women, New London, January 23, on "Synthetic Dyestuffs and Their Bearing on the Life of the Individual and of the State"

Yale University News—A course of eight lectures on the social aspects of mental hygiene will be given by a group of specialists under the auspices of the department of social and political science of Yale University, and the New Haven Council of Social Agencies. President Angell will act as chairman at the first lecture, which will be given by Clifford W Beers. Dr O G Wiedman, medical director of the Connecticut Society for Mental Hygiene, and Dr Paul Waterman, chairman of the state psychopathic hospital commission, will preside at the other lectures. The following subjects will be discussed: "The Mental Hygiene Movement," Mr Beers, "The Mechanism of Human Behavior," Dr Frankwood E Williams, editor of the *Mental Hygiene Quarterly*, "Mental Hygiene and Personal Health," Dr Thomas W Salmon of the Rockefeller Foundation, "Mental Hygiene and Education," Dr C Macfie Campbell, director of the Boston Psychopathic Hospital, "Mental Hygiene and the Family Life," Dr Abraham Myerson, Tufts Medical College, "Mental Service for Children," Dr Arnold Gesell, professor of child hygiene, Yale University, "The Feeble-minded in the Community," Dr Walter E Fernald, superintendent of the Massachusetts School for the Feeble-minded, and "Mental Hygiene in Social Work," Dr Jessie Taft, director of the department of child study, Children's Aid Society of Philadelphia.—The Yale Engineering Association at a recent meeting announced that it will raise funds for the erection of buildings at the summer camp of the Sheffield Scientific School of Yale University at East Lyme.—It was announced, January 16, by Dean Winternitz of the Yale Medical School, that additional building plans recently adopted call for a new pediatric pavilion, a modern dispensary situated in the center of the hospital plant, rehabilitation of the Gifford ward and extension of the south ward for women at the New Haven General Hospital, which is now part of the medical school plant.—In connection with the curriculum the method of assigning students of the third year to the outpatient clinic and the seniors to the wards has been reversed. The development of psychiatry into a section of work, coordinate with the sections of medicine, surgery, diseases of women and pediatrics, is in progress

DISTRICT OF COLUMBIA

Vaccination to Be Enforced—It is announced by Dr William C Fowler, District health officer, that all children entering schools for the second term must be vaccinated. Vaccination for smallpox is compulsory, but typhoid and paratyphoid inoculations will be made on request of the parents.

Howard University News—The *Howardite*, a publication issued for graduates of Howard University School of Medicine, Washington, announces that the sum of \$25,000 has been pledged by the students and a like sum by the administration, trustees and faculty of the university in the campaign to raise \$250,000 by July 1 in order to receive the same amount from the General Education Board for the school of medicine.

ILLINOIS

Revised Influenza Rules—A revised edition of rules and regulations relative to the reporting and handling of influenza cases has been published by, and are available for distribution from, the state department of public health, Springfield.

Hospital News—The American Hospital at Johnston City was formally opened to the public recently. Dr Fred Greenbaum, West Frankfort, has been appointed superintendent. A hospital, to be known as the Roseland Community Hospital, will be erected in that city at a cost of about \$500,000.

Demonstration in Medical Inspection of Schools—Dr Edith B Lowry of the U S Public Health Service has been assigned to direct a demonstration in the medical inspection of schoolchildren at Elgin. The demonstration was undertaken at the request of the local superintendent of public schools. The local board of health and the state department of public health are cooperating in the project.

Mental Hygiene Conference—The Illinois Society for Mental Hygiene held a conference in Chicago February 14-16, in conjunction with the Chicago Medical Society and the Chicago Neurological Society. Among the speakers were Judge Victor F Arnold of the juvenile court of Chicago. Drs Hugh N MacKechnie, president of the Chicago Medical Society, Arnold L Jacoby, director of the Municipal Psychopathic Clinic, recorders court Detroit, Archibald Church, professor of neurology, Northwestern University Medical School, Bird Baldwin, Ph D, director of the Child Research Station at the University of Iowa and Frank Billings, president of the Illinois Society for Mental Hygiene.

Chicago

House of Correction Issues Report—A report has just been issued covering the first fifty years of service of the House of Correction. A special section is devoted to the medical department. In this section of the report, methods of handling alcoholics, drug addicts and defectives are given special attention.

New Orthopedic Society—At a meeting of orthopedic surgeons at the University Club, Chicago, February 2, the Chicago Orthopedic Club was organized. Dr John Ridlon was elected president, Dr Edwin W Ryerson, vice president, and Dr Henry B Thomas, secretary-treasurer. Meetings are to be held monthly.

Hospital News—Nearly 90,000 people passed through the receiving wards of Cook County Hospital during 1922. About 37,000 were admitted as patients, 21,000 were treated at the dispensary and about 28,000 were rejected according to the annual report. Clinics for patients with heart disease were established during the year. The charity ward gave out 200,000 garments to needy persons a service which cost the county nothing. A new 150-bed hospital will be erected by Dr B L Ramsay of the Austin Hospital Association at Central Avenue and Flournoy Street, Austin. Plans have been drawn for a \$350,000 addition to the Washington Boulevard Hospital. Excavation work has been started for the \$50,000 addition to Jefferson Park Hospital, Chicago.

Personal—Dr Wilson B Moody, Chicago, has been appointed resident pathologist at the Methodist Hospital, Omaha. Dr B Barker Beeson, Chicago, has been appointed associate professor and acting director of the division of dermatology and syphilology at Lovola University School of Medicine, Chicago, also dermatologist to the Mercy Hospital. Dr Peter S Winner, assistant superintendent of the Peoria State Hospital, has been appointed superintendent of the Municipal Tuberculosis Sanatorium, Chicago, to succeed Dr Allen J Hruby. Dr Peter Bassoe,

professor of neurology at Rush Medical College, gave a lecture on Modern Treatment of Epilepsy, before the Elkhart County Medical Society at Goshen, February 1. Dr A J Carlson addressed the members of the Peoria City Medical Society, February 6.

INDIANA

Large Fine for Physician—It is reported from Fort Wayne that Dr James W Squires of that city, 68 years old, was fined \$1,000 and costs February 1, when he pleaded guilty to violations of the Harrison Narcotic Law.

All-Time Health Officer Bill Fails—The all-time health officer bill introduced by Dr John N Hurty of Indianapolis, which provided for reorganization of the state board of health and the employment of a health officer in each county to devote full time to the work, was defeated in the legislature, February 3, it is reported.

Hospital Cornerstone Laid—The cornerstone of the new administration building and nurses home which are under construction at the Indianapolis City Hospital, at a cost of \$425,000, was laid on the afternoon of December 23. Following the exercises, a clinic was held by Dr Vilrav P Blair of Barnes Hospital, St. Louis.

IOWA

Personal—Dr Eula Eno Des Moines sailed recently for China, where she will serve as a medical missionary. Dr Asaph Arent Humboldt has been appointed county coroner to succeed Dr H C Doan, deceased. Dr Carl H Carryer, Des Moines, has been reappointed physician of Polk County. Dr R C Milson, Marshalltown, has been appointed city physician to succeed the late Dr J F Battin. Dr Don Griswold, professor of hygiene, State University of Iowa College of Medicine, gave an address on 'Communicable Diseases Among School Children' at the Teachers Institute, at Clinton, recently.

KANSAS

Personal—Drs Melvin C Martin and Frank L Abbey were elected president and secretary respectively of the Harvey County Medical Society at the December meeting. Dr Harry R Bryan, La Crosse, has been appointed health officer of Rush County. Dr F Akin Garvin, Augusta, was recently reappointed health officer of Butler County. Drs Thomas L McCarty, Dodge City, and Walter F Pine, Dodge City, were elected president and secretary respectively, of the Ford County Medical Society at the annual meeting.

Tuberculosis Colony—January 22, Dr S J Crumbine, secretary of the state board of health, inspected the site of the new tuberculosis colony to be established in Kansas City, under the auspices of the city health department. It is planned to erect ten buildings for tuberculous patients on a 21 acre tract just outside the city limits. Construction work will be commenced as soon as the old buildings on the site have been torn down. Lodges and clubs of the city will furnish the one-room cottages and fresh milk and eggs for the tuberculous patients will be supplied by the city.

KENTUCKY

Hospital News—The County tuberculosis hospital at Henderson was reopened January 17. The hospital, which was formerly for tuberculous patients only, has been thoroughly remodeled and furnished with new equipment.

MAINE

New Hospital Opened—The Bradbury Memorial Hospital, Belfast, was formally opened to the public December 2. It is a \$50,000 structure, the main building of which is the old Charles Bradbury homestead. A 90-foot addition, three stories high, enlarged the residence. Several memorial rooms and the roentgen-ray equipment were donated by summer residents. A nurses training school will be maintained in connection with the institution. Free eye clinics will be held once a week, under the direction of Dr Edwin S Steese, New York, who has a summer residence at Northport. Dr Eugene D Tapley is the physician in charge of the new institution.

MARYLAND

Personal—Dr Alexis McGlannan, chief surgeon of the Mercy Hospital, Baltimore, has been appointed consulting surgeon for the Fort McHenry Hospital at Baltimore by Dr I B Rogers, chief medical adviser of the U S Veterans Bureau.

Johns Hopkins Building Program Started—The new \$1,000,000 building for the school of hygiene and public health of Johns Hopkins University is under way. The new structure, to be located at Monument and Wolfe streets, will be of Italian architecture, eight stories in height. Work has been completed on the east wing of the new women's clinic of Johns Hopkins Hospital, and the work of tearing down the west wing, preparatory to the erection of the second half of the clinic, is going on. The new pathologic laboratory of the medical school has been completed. The women's clinic and the pathologic laboratory were erected at a cost of \$450,000 each, and the funds for the public health building were supplied by endowment from the Rockefeller Foundation.

Mental Hygiene Clinic to Be Established—Plans for the establishment of a mental hygiene clinic in Baltimore are being formulated by the board of mental hygiene of Maryland. It is planned to establish at the University of Maryland a department of mental hygiene, which will be conducted as a mental hygiene clinic, where the physicians from the state institutions will be in attendance, enabling them to come in contact with patients suffering from mental disorders in the incipient stages. This clinic will be an intermediate step between the home and the hospitals. It should decrease the number of admissions to the state hospitals and increase the number of discharges and paroles. The cooperation of the University of Maryland is assured, and it now remains to work out the details of operation.

MASSACHUSETTS

Board of Registration in Medicine—Dr Samuel H. Calderwood, Boston, has been elected chairman of the state board and Dr Charles E. Prior, Malden, secretary.

Estate Willed to Harvard—Under the will of Mrs. Alice H. Plimpton, who died in Norwood, recently, \$50,000 is donated to Harvard University, of which \$30,000 will go to Harvard College and \$20,000 to the medical school.

Hospital News—John B. Lewis, Boston, has offered his estate in Reading consisting of a large house and several smaller buildings, together with ample grounds, for use as a city hospital. A group of hospital buildings, made possible by the gift of Miss Amelia Jones, will be erected on the Jones farm in South Dartmouth for crippled children. The first unit of the group to be erected is the hospital proper, which will have a capacity of fifty beds. Later a school and workshop will be provided. The entire project will be carried out by the board of trustees of St. Luke's Hospital. The state legislature has issued an order directing the department of public health to make a general survey of all tuberculosis work in the state, it is stated, as a result of the introduction into the last session of the legislature of several bills to take over all tuberculosis institutions by the state department of health. The state health commissioner has appointed a special board, of which Dr. Sumner H. Remick is chairman, to carry out the work.

MICHIGAN

Chiropractor Sentenced—It is reported that F. W. Barkdall, a chiropractor of Big Rapids, was sentenced to serve ninety days in the county jail and fined \$50, at Cadillac, January 28. Following insulting remarks by Barkdall regarding the law, the judge stated that twenty days would be added to the jail sentence if the \$50 fine was not paid within ten days.

Influenza Closes Town—City health authorities of Bessemer have issued strict quarantine orders in an effort to curb the epidemic of influenza now prevailing there. All public and parochial schools, dance halls, skating rinks, moving picture theaters and other public places have been closed for an indefinite period. Social gatherings have been forbidden and no church services will be held.

MINNESOTA

Infant and Maternity Hygiene—A course of fifteen lessons in the hygiene of maternity and infancy will be offered to the women of the state under the auspices of the division of child hygiene of the state board of health and the extension division of the state university, it is announced. The course will be given to groups of from fifteen to twenty women under the leadership of the county or district nurse, rather than to individuals. On the satisfactory completion of the course, the university will present each woman with a certificate. The division of child hygiene has prepared an obstetric

package that can be used in rural work, containing the minimum of sterile supplies used for delivery in the home. These packages can be prepared at a cost of \$2.

MISSOURI

Personal—Dr. Borden S. Veeder, professor of clinical pediatrics, Washington University School of Medicine, St. Louis, has been named a director of the new American Child Health Association. Dr. Robert J. Terry, professor of anatomy, Washington University School of Medicine, St. Louis, was recently elected secretary of the anthropological section of the American Association for the Advancement of Science. Dr. Everts A. Graham, professor of surgery, Washington University School of Medicine, St. Louis, has accepted an invitation from the California Academy of Medicine, San Francisco, to speak on the "New Phases of Thoracic Surgery." Dr. George A. McCulloch, Excelsior Springs, suffered fractures of both legs and one arm and internal injuries, January 28, when the automobile in which he was driving was struck by a train. A banquet was given in honor of Dr. Murray C. Stone and Dr. William R. Beattie, respectively outgoing and incoming presidents of the Green County Medical Society, at Springfield, January 26.

MONTANA

Personal—Dr. Earl C. Kading, Belgrade, surgeon to the Chicago, Milwaukee and St. Paul and the Northern Pacific railroads, has been appointed chief surgeon of the Pacific liner *Alexandria* plying between San Francisco and Honolulu. Dr. Daniel L. High, chief of the medical division, U. S. Veterans' Hospital, Helena, addressed the Fergus County Medical Society at the annual meeting. Dr. Harry K. Wilson, Lewiston, was elected president.

NEW JERSEY

Memorial to Dr. Whitenack—Dr. Carl E. Sutphen is chairman of a committee which will conduct a campaign to raise from \$60,000 to \$75,000 for the purpose of erecting a wing at the Newark Babies' Hospital, as a memorial to Dr. Miller Royal Whitenack, who died recently from septicemia, incurred while treating a child for throat trouble.

NEW YORK

Scarlet Fever Closes College—Bates College at Lewiston has been placed under quarantine for scarlet fever. Eight cases have been reported among the students. No further spread of the disease is anticipated.

Bill to License Chiropractors—A bill to permit the licensing of chiropractors has been prepared for presentation to the New York State Legislature. Two hundred members of the New York State Chiropractic Society have adopted a resolution condemning the recent action of the state board of charities for closing the chiropractic section of the East Side Clinic for Women and Children. The chiropractors claim that absence of a law licensing chiropractors enables charlatans and fakirs to ply an illicit trade in the name of chiropractic.

Rural Health Centers Urged—The state health department is making more vigorous efforts than ever before to induce the legislature to adopt laws establishing rural health centers. The legislation desired would provide for the establishment of hospitals fully adequate for the needs of smaller communities. These hospitals would be maintained partly by local appropriations and partly by state aid, and also by payments from patients, who would be charged according to their means. Officials of the health department cite figures showing that in 1911 in thirty rural localities there were 1,010 physicians, whereas today there are only 829 physicians, and of this number only twenty-six could be called young men. It is believed that the needs are so serious that opposition to the proposed legislation can be easily overcome.

New York City

Health Welfare Course—The Washington Square center of New York University opened its first course on "Labor and Employment Management," February 4. Among the subjects to be covered are accident and fire prevention, management of a medical department, the use of emergency hospitals, illness prevention in industrial plants, plant hygiene and sanitation including consideration of rooms and food for workers, wages and wage systems, employees representations, profit sharing and life insurance.

Harvey Society Lecture—The seventh Harvey Society Lecture will be delivered by Dr Leon Asher, professor of physiology, University of Berne, at the New York Academy of Medicine, February 24. His subject will be "The Building Up of the Organism by Chemical and Nervous Coordination and Regulation." The lecture by Dr E V Cowdry of the Rockefeller Institute of Medical Research on "The Significance of the Internal Reticular Apparatus of Golgi in Cellular Physiology" has been postponed to March 10.

Hospital Notes—The Bronx Hospital, located at the corner of Fulton Avenue and One Hundred and Sixty-Ninth Street, has enlarged its holdings by purchasing the Bronx branch of the Young Men's Hebrew Association on the west side of Franklin Avenue, between One Hundred and Sixty-Eighth and One Hundred and Sixty-Ninth streets.—The Hospital for the Ruptured and Crippled has bought two four-story houses at 311 and 313 East Forty-Third Street, adjoining its present holdings.—A two-story fireproof building is being added to the House of St Giles the Cripple at Garden City L I, at a cost of \$50,000. The new structure will provide accommodations for sixty children.—The Samaritan Hospital, Brooklyn, has under construction a six-story building adjacent to the present hospital building and replacing a part of that structure. The new building will cost about \$200,000.—The new wing to Roosevelt Hospital, which when completed will cost \$1,000,000, is in the process of construction.

NORTH CAROLINA

Physical Education Course—The North Carolina College, Greensboro has adopted a four years' course in hygiene and physical education to meet the demand for trained directors in physical education throughout the state.

Hospital News—The North Carolina Orthopedic Hospital for Crippled Children, Gastonia, has received as appropriation from the government of \$25,000 for improvements, and \$65,000 annually for the next two years for maintenance. The age limit of children who can enter the hospital has been raised from 14 to 16 years.—A well equipped orthopedic clinic has been established at Charlotte, as an adjunct of the health department. It was opened to the public, February 1, with Dr Alonzo Myers, who gives his services free, in charge.

OHIO

Heart Clinic Opened at Hospital—A clinic for patients with heart disease has been opened at the Cincinnati General Hospital, under the direction of Dr Julien E Benjamin. This is the first of a series of clinics to be established over the city in a campaign against heart disease. The work is under the auspices of the Public Health Federation. Under the direction of the board of health, a clinic will also be established in one of the public schools to care for children in certain districts. Dr William H Peters, health officer is arranging to have persons suspected of having heart disease reported to the clinic, where free treatment and advice will be given.

Chiropractors to Serve Prison Sentences—It is reported that four chiropractors were sentenced to the Canton workhouse and one to Trumbull County Jail January 27 by Squire Matteson at Warren when they refused to pay \$500 fines for practicing without a license.—Ten of the seventeen chiropractors awaiting trial at Youngstown for practicing medicine without a license state that they will go to prison rather than pay fines which go to the state medical board for their further prosecution.—Fifteen chiropractors have been arrested in Cincinnati and are now awaiting trial, nine were arrested in Columbus January 27.—It is reported that all unlicensed chiropractors in Dayton will be arrested.—Hearings of cases against chiropractors are also scheduled at Girard and Niles.

OKLAHOMA

Academy of Science—The annual meeting of the Oklahoma Academy of Science was held at the University of Oklahoma, February 10. In addition to the reading of scientific papers detailing research work done in the state, the one hundredth anniversaries of the birth of Gregor Mendel and Louis Pasteur were celebrated.

OREGON

Personal—Dr Lawrence Selling was recently elected president of the Portland Academy of Medicine.—Dr Clarence W Keene has been appointed health officer of Silverton.—

Dr Robert A Jayne has been elected mayor of Philomath for the second term.—Dr Albert H Ross, Eugene was reelected president of the Lane County Medical Society at the annual meeting and Dr Gaven C Dyott, secretary-treasurer.—Dr W Ross Eaton, Oregon City, is seriously ill with epidemic (lethargic) encephalitis at the Emanuel Hospital, Portland.

PENNSYLVANIA

Tablet to Dr Forwood—A memorial tablet was unveiled by the Keystone Club of Chester in honor of Dr Jonathan L Forwood, first president of the Delaware County Medical Society, at a watch service on the evening of December 31 to which the members of the Delaware County Medical Society and their families were invited.

County Medical Society Provides Lecture on Vivisection—February 1 under the auspices of the Pittsburgh Academy of Science and Art a lecture provided by the Allegheny County Medical Society, was delivered in Pittsburgh by Mr Ernest Harold Baynes entitled "The Truth About Vivisection." Following this lecture, a resolution was offered to the effect that Mr Baynes had proved conclusively that the main contentions of the antivivisectionists have no foundation in fact and that it was the sense of the audience that "animal experimentation including vivisection has been and is of incalculable value to mankind and to animals through medicine and surgery and that its practice should be allowed to continue unhampered by ignorance and prejudice."

Philadelphia

Warrants for Sixteen Physicians—Warrants for sixteen physicians have been issued by Magistrate Grellis at the instance of R J Brauner, an inspector connected with the state health department charging each with failing to report within ten days births that have occurred under their professional care. A fine of from \$5 to \$50 is assessed for each offense.

City Physicians Rebel Against Vice Quarantine Duty—Mayor Moore's order for the department of health to supervise medical inspections in a city-wide vice quarantine has resulted in open rebellion in that department. Dr George Ernest H Johnson for fourteen years chief diagnostician has resigned. Dr Henry A Strecker, assistant chief medical inspector has protested to the director of public health. Dr Charles L Furbush. Other physicians also believe they should devote their duties to the regular routine of the department. The inspections, which were to have been started ten days ago still are under discussion. Dr Furbush has appointed Dr Anna G Young for the examination of women.

Wyncote Bird Club Adopts Resolutions on Vivisection—The Wyncote Bird Club held a special meeting January 25 to hear an address by Mr R R Logan president of the American Antivivisection Society. Following the lecture, an open discussion was held in which Mr Ernest H Baynes defended vivisection. At the close of the discussion the society adopted the following resolutions:

Resolved That it is the sense of this club that Mr Logan has entirely failed in his attempt to show that vivisection is immoral and unethical and unnecessary to the welfare of human beings or of animal and be it further

Resolved That we heartily endorse Mr Ernest Harold Baynes stand on animal experimentation and sane humane education in general.

Society News—At the annual meeting of the Association of Industrial Medicine, Dr Earle H Ingram was elected president and Dr George H Hughes, secretary.—Dr William E Parke was elected president and Dr Charles S Barnes secretary of the Obstetrical Society of Philadelphia, recently.—The American Congress of Internal Medicine will convene in Philadelphia during the first week in April. Clinics and demonstrations will be given at the various hospitals of the city.—At the annual meeting of the Pathological Society of Philadelphia Dr Oliver H Perry Pepper was elected president and Dr Edward Weiss secretary.—Dr William H Mackinnon and Stirling W Moorhead were elected president and secretary respectively of the Philadelphia Urological Society, at its annual meeting.

SOUTH CAROLINA

Chiropractic Bill Is Killed—The bill introduced into the House of Representatives by Edgar Brown to create a state board of chiropractic examiners in South Carolina was killed by a vote of 65 to 46 January 31. It was introduced by the House in 1922.

TEXAS

Hospital News—The new city hospital at Teague was opened in December—It is announced by Col M A W Schockley, commanding officer at the William Beaumont General Hospital, Fort Bliss, that improvements involving an expenditure of \$50,000 will be made at that institution

State Public Health Association—At the annual meeting of the Texas Public Health Association, February 8, at Austin, the following officers were elected for the ensuing year: president, J W Butler, Galveston, vice presidents, Drs Elva A Wright, Houston, and Joseph B McKnight, Sanatorium, and secretary, Dr Zachary T Scott, Austin

WASHINGTON

Surgical Society Elections—At the annual meeting of the Seattle Surgical Society, January 19, Dr Otis F Lamson was elected president, Dr Walter C Woodward, vice president, and Dr Hubbard T Buckner, secretary-treasurer—At the annual meeting of the Seattle Academy of Surgery, January 24, Dr E Weldon Young was elected president, Dr Frederick R Underwood, vice president, and Dr William C Kintner, secretary-treasurer

Personal—Dr Frederick J Cullen, health officer of Puyallup, has been appointed health officer of Pierce County, to succeed Dr Philip B Swearingen, Tacoma—Dr Milton G Sturgis, Seattle, read a paper on "Unrecognized Fracture of the Spine" before the Victoria (B C) Medical Society, recently—Dr J A McNiven, Aberdeen, suffered a fractured skull when he was knocked down by an automobile, January 11—Dr Ottar A Thomle was reappointed county physician of Snohomish County at the annual meeting of the board of county commissioners, January 11

WEST VIRGINIA

Health Officer Appointed—Dr. Edward C Bennett has been appointed health officer of Richwood to succeed Dr Ernest F Flora

Hospital Merger—It is announced that the Charleston General Hospital merged with the Sheltering Arms Hospital, February 1. Dr John E Sanaday, is superintendent of the combined institutions, which now have a capacity of 200 beds

WISCONSIN

State Board of Health Elects—At the annual meeting of the Wisconsin State Board of Health at Madison, Drs William F Whyte, Madison, and Edward S Hayes, Eau Claire, were reelected president and vice president, respectively, for the ensuing year

PORTO RICO

Radio Concerts for Lepers—An anonymous gift of \$100 from New York City and added local contributions have made possible the installation of a radio receiving set at Cabras Island, the leper colony of Porto Rico. The local telephone company installed the instrument free of charge, and concerts and news broadcasted from San Juan, Havana, and the United States can be received. There are thirty-six lepers now stationed on the island

CANADA

Toronto Academy of Medicine—The annual library and historical night of the academy was held, January 2. Dr O Fraser Harris, professor of physiology of Dalhousie University, Halifax, delivered the historical lecture. Dr Primrose presented some early medical diplomas from the University of Edinburgh. Dr James A Temple presented a photograph of the late Dr Edward M Hodder, once professor of obstetrics and gynecology at Trinity Medical College. A volume of the *Consolidated Statutes of Great Britain* of the twenty-third year of Queen Elizabeth's reign was donated by Dr Thomas W G McKay of Oshawa

Hospital News—An addition to St. Justines Hospital, Montreal which was recently opened increased the capacity of that institution from eighty to 150 beds. The new structure was erected at a cost of \$300,000—During the fire in Ontario last October the general hospital in Haileybury was completely destroyed. A site has been purchased with the assistance of the Daughters of the Empire and the Ontario Red Cross and a building with modern equipment will be erected as soon as possible. Following the fire the Ontario

Red Cross placed at the disposal of the town an emergency hospital in which patients will be cared for until the new general hospital is erected

Public Health News—A proposed "Public Health Campaign" on an extensive scale is under consideration by the educational and publicity committee of the British Columbia Medical Association. Apart from a systematic press campaign, a series of public addresses will be given throughout the province shortly—A comparative table issued recently by the provincial officer of public health in Ontario shows a remarkable decrease in the number of cases of smallpox and several other communicable diseases. Scarlet fever and diphtheria also show a falling off. Whooping cough, however, has increased. In January, 1922, there were only eighty-nine cases, while last month 376 cases were reported. Influenza, of which there is much in Toronto, shows 115 cases for last month, with twenty-nine deaths, while for the same month last year no cases were reported. Venereal diseases of all types show a downward trend in the number of cases

GENERAL

Fraudulent Vender of Medicines—An individual who falsely claims to be connected with Rush Medical College of Chicago is traveling through the Southwest and fleecing the public by collecting \$1.98 from each, which he tells them covers the cost of medicines which will be sent to them by the college named. A stream of letters received by the college indicates that he is deceiving many people

Convalescent Homes Listed—The Sturgis Research Fund of the Burke Foundation for Convalescents, White Plains, N Y, has recently issued a directory of 162 convalescent homes in the United States. They have a total of 8,980 beds, including 4,525 used during the summer months only. It is noted that one third of all convalescent beds in the United States are in New York City

Clinical Society of Genito-Urinary Surgeons—The third annual meeting of this association was held in Chicago, January 26-27. The following officers were elected for the ensuing year: president, Dr E L Keyes, Jr, New York, vice president Dr Hugh H Young, Baltimore, and secretary-treasurer (reelected), Dr William C Cunby, Boston. Clinics were held by Dr Louis E Schmidt at the Michael Reese and Alexian Brothers hospitals, and by Dr Herman L Kretschmer at the Presbyterian and U S Veterans' No 76 hospitals

Alpha Omega Alpha Issues Catalogue—The first general catalogue of the Alpha Omega Alpha, the medical honorary fraternity, a volume of 250 pages, has been issued recently. In addition to a roster of 3,780 names with addresses, the publication contains a list of the general officers and committees, also a history of the organization since it was formed in 1902. Dr William W Root, Slaterville Springs, N Y, secretary-treasurer of the society, is the editor. There are twenty-six chapters in the organization, two of which are in Canada, at Toronto and McGill universities

Influenza Epidemic—Twenty-four states reporting through their health offices to the U S Public Health Service gave a total of 17,593 influenza cases occurring in the country for the week ending Feb 3, 1923, according to the report of the U S Public Health Service issued this week. The same states for the preceding week reported 15,328 cases. Both figures show an increase over the same period for the years 1921 and 1922. In 1920 more than 170,000 cases were recorded. Surgeon-General Cumming stated that the present spread of influenza really amounts to an epidemic, but the disease is manifesting itself only in a mild form

Deaths from Influenza and Pneumonia in Large Cities—The number of deaths from influenza and pneumonia combined in certain large cities of the United States for the last four weeks of 1922 and the first week of 1923 has in nearly each instance steadily increased. New York City had the greatest number of deaths (208) in the first week of January with Philadelphia a close second (178). Chicago came third with 117 deaths and Detroit fourth with seventy-six deaths. Boston had only fifty-eight deaths, and Baltimore fifty-two. Cincinnati had forty-four deaths and Atlanta forty. Since December 1 the mortality from influenza and pneumonia has increased week by week in each of the cities named

Punishment for Narcotic Drug Violators—A large reward will be given for information leading to the arrest and conviction of violators of the Federal Narcotics Drug Import and Export Act according to amendment presented in the House this week by Representative Lineberger. The measure

fixes a fine of not less than \$500 and not more than \$5,000 with a prison term of from one to ten years for fraudulent importation of narcotics into the United States or for facilitating in any manner the transportation, concealment or sale of any narcotic drug after importation. Amendment provides that portions of fines paid by the offenders and of bail forfeited by offenders shall be used to pay rewards for information.

The Sofie A Nordhoff-Jung Cancer Research Prize—An annual prize of \$500 bearing this title has been founded by Dr Sofie A Nordhoff-Jung of Washington, D C. The prize is offered to encourage researches in the etiology, prevention and treatment of cancer. It will be awarded by a committee composed of members of the University of Munich, Bavaria and will be granted for the first time in December, 1923. The committee consists of Professors Borst, Doederlein and Sauerbruch, with Professor von Romberg as chairman. This body is empowered to elect successors. The award will be made as a recognition of the most conspicuous work in the literature bearing on cancer research done previously to the allotment of the award. Though the prize will not be awarded on a competitive basis, the commission invites all research workers in cancer to submit literature on this subject.

Case Against Sheppard-Towner Law—The Secretary of the Treasury and his codefendants petitioned this week, in the District of Columbia Supreme Court, that the action of Mrs Harriet A Frothingham of Massachusetts attacking the validity of the Sheppard-Towner Maternity Act be dismissed. The defendants asserted through United States Attorney Gordon that the case cannot be maintained because it is in effect against the United States, that there is no equity in the bill, and that no facts are alleged which if true, would entitle the plaintiff to relief. Congress has the power, counsel for the defendants claim, to act for the public welfare in matters the regulation of which belongs exclusively to the states. The law does not attempt to force the acceptance of its provisions, but leaves it optional with the states. It is anticipated that the hearing of this case will be expedited to enable it to reach the United States Supreme Court in time to be argued with the case brought there by the state of Massachusetts, which also attacks the validity of the act.

American Medical Association and Public Health—During the proceedings at Chicago, March 5 to 7 of the Annual Congress of the Council on Health and Public Instruction of the American Medical Association, a meeting will be held on the afternoon of March 7 with the Public Health Service for the discussion of public health. At this meeting over which Surg-Gen H S Cumming has been asked to preside, the following program will be given: 'Education of Sanitarians and the Future of Public Health in the United States,' by Dr H S Cumming, a report on the activities carried on by the Public Health Service since the conference of last March on the education of sanitarians, by Asst Surg-Gen W F Draper, 'Recruiting and Training of Sanitarians,' by Dr C E Winslow, 'Steps Already Taken in Standardization of Public Health Training,' by Dr J A McLaughlin, U S Public Health Service and 'The Course in Public Health and Hygiene for Medical Students,' by Dr D E Edsall of Harvard University. These addresses will be discussed by Dr John Sundwall of the University of Michigan and by Dr E O Jordan of the University of Chicago. The closing address, 'Education of the Partly Trained Sanitarian Now Employed,' by Dr W F Sears of Syracuse University, will be discussed by Dr E G Williams, state health officer of Virginia, and Dr W S Rankin, state health officer of North Carolina.

Bequests and Donations—The following bequests and donations have recently been announced:

Lying In Hospital, Providence, R I, \$800 774 the proceeds of a campaign for funds. Esmond Mills \$3 000. Mr and Mrs E B Merriam \$1 500. Providence Fire Department \$1 200. Queen Dyeing Company \$1 000 in memory of the late Mrs M C Dart \$900 and Mrs Horace Kimball \$600. Roosevelt St Luke's and the New York Hospitals are the chief beneficiaries of the \$3 000 000 estate of the late Miss Emily F Southmayd. Memorial and St Joseph's hospitals, Nashua, N H. Hopewell Society of Brooklyn, Home of St Giles the Cripple, New York Association for the Blind, Faith Home for Incurables, Brooklyn. Servants for the Relief of Incurable Cancer, Trudeau Sanatorium, Trudeau, N Y, and the American Red Cross each \$25 000 and a share of the residuary estate under the will of Mrs Sarah J Robinson. Twenty New York institutions will share in the distribution of the \$580 471 estate of the late Alfred Blumenthal, recently killed in a rail way accident in Spain. Mount Sinai Hospital will receive one-fifth of the estate. Brown University, Providence, R I, \$50 000 from the estate of Robert P Brown to endow a professorship in biology in honor of

Professor Appleton of the university \$3 800 subscribed to provide annual lectures on pure or applied chemistry to be known as the John Howard Appleton Lectureship Fund. New York Skin and Cancer Hospital \$25 000 by the will of Mary A Palmer Draper. Iroquois Hospital, Watseka, Ill, \$25 000 by the will of Mrs Sarah Kay. Trudeau Sanatorium, Trudeau, N Y, and the Hospital for Crippled and Cripple, New York, each \$5 000 by the will of Mrs Cora M Perkins. American Society for the Control of Cancer \$3 719 by the will of Mrs Kate H P Roberts of Chicago. American Welfare Association, Wieboldt Department Stores and Mr Wieboldt, Chicago \$4 000. Samuel Insull \$1 200. Armour and Company, Albert Breitung, Paul F Mueller, Henry Schoellkopf, Teich and Riesler and Emil and Carl Etel, all of Chicago, each \$1 000. Two lots at Clovis, California, for the erection of a hospital for Indians, money for which will be collected by subscription.

Society News—The forty-fifth annual congress of the American Laryngological Association will be held at the Hotel Ambassador, Atlantic City, N J, May 16-18, under the presidency of Dr Emil Mavor of New York. Dr George M Coates of Philadelphia is the secretary. The next annual meeting of the American Society for the Control of Cancer will be held in New York, March 3. The American Association of Official Surgeons will hold its thirty-sixth annual convention in Chicago in September under the presidency of Dr Paul C Goodlove. Detroit it is announced. Garth Hyatt, former Chicago newspaper man, has been elected secretary of the research bureau of the association. The seventy-eighth meeting of the New England Pediatric Society was held in Boston, February 9, at the Boston Medical Library. Dr Edwards A Park, professor of pediatrics, Yale Medical School, presided. Dr Ruth A Guy, New Haven, spoke on 'The Use of Cod Liver Oil in Rickets.' Its action as a Regulator of the Calcium and Phosphorus Metabolism, and Dr Ethel C Dunham, New Haven, read a paper on 'A Study of Diets and Living Conditions of Rachitic Children with a Report of the Earliest Case of Rickets on Record.' The thirty-ninth session of the American Association of Anatomists will be held in Chicago, March 28-30, under the presidency of Dr Clarence M Jackson, professor of anatomy at the University of Minnesota Medical School, Minneapolis. The third annual convention of the Pacific Northwest Medical Association will be held in Seattle, June 19-21, under the presidency of Dr H D Dudley, Seattle. Among the speakers will be Drs A J Carlson, Peter Bassoe, Dean Lewis, Oliver S Ormsby and R T Woodruff of Chicago and Drs F W Peabody and Channing Frothingham of Harvard University Medical School, Boston.

LATIN AMERICA

Personal—Dr P D Rodriguez Rivero has been appointed Director General of Health of Venezuela, to succeed Dr L G Ghacín Itriago.

A Physician Elected President—One of the most prominent Central American physicians, Dr A Quiñones Molina, was elected president of El Salvador, at the recent election held in that country. Dr Quiñones Molina graduated in 1897. He has filled many positions of importance, and until recently was vice president of El Salvador.

New Cuban Journal—The Medical Association of Camaguey, Cuba, has begun the publication of a journal entitled *Camaguey Medico*. The editor is Dr J Aguillo Sánchez. He will be assisted by Drs A A Aguero G and F Martinez Lamo. New officers were recently elected by the medical society as follows: president, Dr R V Guerrero Betancourt; vice president, Dr V Rodriguez Brahmón; secretary, Dr A Aguero Garcia. Of sixty physicians at Camaguey, thirty attended the meeting.

FOREIGN

Death of Roentgen—The cable reports the death of Prof Wilhelm Konrad Roentgen, whose discovery of the rays, which he modestly named the X rays—the unknown rays—has made his name immortal. He was born March 27, 1845, at Lennep, near the Ruhr district. He was graduated at Zurich and became professor of physics at Strasbourg. Later at Giessen and Wurzburg, and finally at Munich. His great discovery was made at Wurzburg in 1895. He retired from the chair of experimental physics at Munich in 1920, at the age of 75.

Congress on "Logopadie"—The *Munchener medizinische Wochenschrift* relates that an international gathering is being planned to discuss the nature and treatment of aphasia and other disturbances in speech. This Kongress für Logopädie will be held in Vienna. Dr Froese is the secretary.

GOVERNMENT SERVICES

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the secretary, and he appeals for communications and summaries on these topics. He extends his invitation to all countries, but urges that, in the interest of scientific discussion, the delegates selected by other countries should be able to speak German.

The Heubner Prize in Pediatrics—It is announced that the triennial prize offered by the Heubner endowment for the most important work in pediatrics of the last three years is to be awarded to Dr Rudolf Degkwitz of the children's clinic of the University of Munich. His name has been prominent in the literature of late on account of his success in preventive serotherapy of measles, utilizing convalescents' serum. This is the third awarding of the Heubner prize. The first recipient was Pfaunder, also of the Munich pediatric service, for his research on body measurement ratios. The prize at the second awarding was given to Dr Ylppo of the Berlin pediatric service for his studies on the pathology of the prematurely born.

International Health Course—The health section of the League of Nations recently brought to a successful conclusion an international health course for medical officers in which twenty-two officials from the health departments of Austria, Belgium, Bulgaria, Italy, Poland, Russia and other countries took part. The course was held in Belgium and Italy during two and one-half months, under the auspices of the directors of the Belgian and Italian health services, respectively, through the aid of a grant from the Rockefeller Foundation. On the completion of the course, those who took part met at Geneva, where a discussion was held as to the benefits derived. The next course of this kind will be held in England.

The Jenner Centennial at Paris—Supplementary to the public meeting of the Académie de médecine at Paris in honor of the centennial of the death of Jenner, Jan. 26, 1823, the delegates to the celebration were the guests of the Académie at a banquet at a private clubhouse. M. Paul Strauss, minister of hygiene, was toastmaster, and Sir Ronald Ross and two others responded on behalf of England. Professor Willems and Rutter spoke for Belgium, and Dr Haccius for Switzerland. Delegates from the Netherlands and from Tunis also paid tribute to the discoverer of vaccination. Lantern slides and a museum presenting the history of vaccination were features of the public centennial celebration at the Académie. It still treasures the deposit bequeathed to it by Jenner a century ago.

Personal—Dr R. A. Peters has been elected to the Whitley professorship of biochemistry at the University of Oxford. The Milroy lectures on 'Canned Foods in Relation to Health' will be delivered, February 22 and 27 and March 1, by Dr W. G. Savage. Dr Geoffrey Evans will deliver the Goulstonian lectures, March 6, 8 and 13 on "The Nature of Arteriosclerosis," and Dr Arthur J. Hall will give the Lumen lectures on 'Encephalitis Lethargica (Epidemic Encephalitis),' March 15, 20 and 22. All these lectures will be delivered at the Royal College of Physicians of London. The king of the Belgians has conferred the Order of Leopold II on Dr Alexander Granville, president of the sanitary, maritime and quarantine council of Egypt. The king of England has conferred knighthoods on the following physicians: Dr David Drummond, professor of the principles and practice of medicine in the University of Durham; Dr William Hamer, chief medical officer of the London County Council; Dr Norman Walker, representative for Scotland in the General Medical Council and lecturer on diseases of the skin at Edinburgh University; Dr Hilarion Marcus Fernando, member of the legislative council of the Island of Ceylon and Dr Bernard Spilsbury, lecturer of morbid anatomy at St. Bartholomew's Hospital Medical College. The Kaiser-i-Hind medal has been conferred on Dr Robert Harper, medical missionary of the American Baptist Mission Burma.

Deaths in Other Countries

Dr John B. Haycraft, emeritus professor of physiology at University College, Wales.—Dr T. W. Fowler, former mayor of Coventry, England and president of the Coventry Division of the British Medical Association, aged 61.—Dr Bernard Pickering, secretary of the Bolton (England) Medical Association, December 18.—Dr John J. Pringle, lecturer on dermatology at the Middlesex Hospital, secretary of the Dermatological Society of London, formerly president of the dermatologic section of the Royal Society of Medicine, and the British Medical Association at Christchurch, New Zealand in December, aged 67.—Dr Pringle was a corresponding member of the Société française de dermatologie.

of the Wiener and Berliner dermatologische Gesellschaften and of the Società Italiana di dermatologia. He edited the *Portfollo of Dermochromes* and the *British Journal of Dermatology*.—Dr F. P. Nunneley, at Bordighera, December 17.—Dr Horatio P. Symonds, formerly lecturer on surgery at the University of Oxford and president of the surgical section of the British Medical Association, January 16, aged 71.—Dr H. Hartmann, aged 60, the leader of the movement for organization of the profession in Germany which resulted in the foundation of the Leipzig League, now renamed the Hartmann League. As a general practitioner at Leipzig, he early appreciated the evils of contract practice in the absence of concerted action by physicians, but he found it uphill work in 1900 to rouse the profession to the advantages of organization. The general acceptance of the principle of the "free choice" of a physician by the insured was his latest and greatest triumph.—Dr Vaclac Pitha, professor of gynecology and obstetrics at the University of Prague, aged 65.—Dr Francisco Rueda, an otolaryngologist, at Madrid Hospital at Rosario.—Dr Clément Philippe of Brussels, aged 67.—Dr Gennaro D'Errico, instructor in experimental physiology at the University of Naples.—Dr Leonel Plasencia, professor of biologic and medical chemistry, eminent in laboratory research, and Dr Rafael Pérez Vento, professor of physiology, both at the University of Havana.—Dr Edmundo Lacerda of Petropolis.—Dr P. Muller, formerly director of the gynecologic clinic at Berne, aged 86.—Dr F. Schanz, an ophthalmologist of Dresden.—Dr Victor Bovet, at an advanced age. He was an authority on military medicine in his day, and instructor at the University of Berne.

Government Services

Hospital to Be Discontinued
Wash. received orders from Washington, February 1, to close the institution at once. The thirty men still under treatment will be transferred to Knoxville or other government hospitals. It is announced that the Colfax institution has been in operation about two years.

Examination for Commissions
An examination for those who desire to obtain commissions in the Medical Corps of the regular army is announced for July 16-20, 1923, at the Office of the Surgeon General in Washington, D. C.

Bill to Repress Prostitution
The bill pending in the Senate to enlarge the powers of the Department of Justice for the repression of prostitution for the protection of the Army and Navy has been favorably reported from the Committee on Judiciary. The purpose of this bill is to revive the functions formerly exercised by the U. S. Interdepartmental Social Hygiene Board and to authorize agents of the Department of Justice to inquire into vice conditions in the vicinity of army and navy posts or forts or hospitals. The bill proposes an expenditure of \$325,000 a year for carrying out its provisions.

Hearing on Narcotics Before House Committee
The Committee on Foreign Affairs of the House of Representatives Tuesday, February 13, began hearings on House Joint Resolution No. 430, which requests the President to urge certain foreign governments to limit the production of narcotic drugs and raw materials of which they are made to the amount actually required for medicinal and scientific purposes. The resolution states that the annual production of opium is approximately 1,500 tons, of which less than 75 tons is required. It also asks the President to request Great Britain, Persia and Turkey to limit the growth of the poppy and the production of opium and its derivatives and to call on the governments of Peru, Bolivia and the Netherlands to eliminate the production of coca leaves and their derivatives. It is expected that physicians and officials from the Federal Narcotic Bureau and from the Department of Justice will be called to testify before the committee.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Jan 26 1923

The Jenner Centenary

The centenary of the death of Jenner has been commemorated in various ways. This notice in memoriam appeared in the *Times*.

JENNER—In honoured memory of EDWARD JENNER M.D. LL.D. F.R.S. Physician Extraordinary to His Majesty King George IV Foreign Associate of the National Institute of France &c. the discoverer of vaccination born at the Vicarage Berkeley Glos. 17th May 1749 died at Berkeley 26th January 1823. This notice is inserted by despatch of Dr Jenner's sister Ann who married the Rev. William Daviesector of Eastington Glos.

But the very efficacy of his discovery has led people to forget its value, for the universal devastation once caused by smallpox is forgotten. It is well to recall that in his time his disease was regarded as one that none might expect to escape. 'A mother's son is never her own till he has had the smallpox' was a current saying. At the Royal Society of Medicine, the president, Sir William Hale White, delivered an address on 'Jenner and His Work.' Mr Edward Jenner Davies of Stonehouse Gloucestershire, a great-grandson of Jenner's sister Ann, placed a laurel wreath on the statue of Jenner in Gloucester cathedral. Other descendants of Jenner present were a great-granddaughter and two great-great-granddaughters. An Indian physician, Dr M. L. Bangara, placed on the statue a gift of flowers inscribed 'An humble tribute from India.' A commemorative exhibition of personal effects, medals, books, manuscripts, engravings, caricatures and other objects connected with Jenner is being held at the Vellcome Museum, and will remain open for some months.

Maintenance of Illegitimate Children

An influential deputation laid before the home secretary evidence as to the unsatisfactory position of unmarried mothers and illegitimate children. They contended that the unfair proportion of the financial burden thrown on the mother was an important factor in the morbidity and morality of illegitimate children, and also tended to a further moral lapse on the part of the mothers. They urged the home secretary to introduce a bill making it possible for unmarried parents by their subsequent marriage to relieve the innocent child of the stigma of illegitimacy, as in every other civilized country. They also proposed that the bill include provision for an increase in the maximum amount payable under an affiliation order, the present sum of \$2.50 weekly being inadequate in view of the present cost of maintaining a child. The home secretary considered that the reputation had put before him a very strong case and he expressed sympathy with the objects in view. Though want of time prevented him from promising that the government would introduce a bill this session, that would not prevent the introduction of a private member's bill, if successful in the ballot. In such circumstances, the government might see its way to furnish facilities for the passage of such a measure.

Control of the Drug Traffic

Sir William Collins who, at The Hague in 1911-1912 assisted in drafting the measures of the International Opium Convention has during the last five years published in the *Times* several communications urging their effectuation and the need of world-wide control of the production of opium, morphin, cocain and other drugs of addiction if the growing abuse of these drugs and their employment for other than

legitimate purposes are to be prevented or checked. In a letter to the *Times*, he now points out that it is the excess of production over any conceivable legitimate use that contributes largely to the misuse of these drugs. A report laid before the assembly of the League of Nations last September, recommended control of production so as to limit it to the amount required for medical and legitimate purposes, as the most effective way of stopping illicit traffic. But it has not been found easy to determine with accuracy what the legitimate requirements of these drugs are (1) for the world's consumption and (2) to meet the demands of each particular nation. At the Hague Conference of 1911, Sir William Collins stated that at a London hospital treating 138,000 patients annually, the consumption of opium was less than 13 pounds and of morphin less than 5 ounces. Recently, with the assistance of Mr Langford Moore dispenser to St Bartholomew's Hospital he has ascertained that at ten large London hospitals which treated more than 70,000 inpatients and more than 550,000 outpatients in the year 1921 the amount of opium used was less than 42 pounds of morphin less than 5½ pounds, and of cocain, a little more than 9 pounds. These relatively modest amounts tend to show that of the hundreds of thousands of kilograms of opium produced and of the tons of morphin manufactured and exported annually there must be an ample margin available for illicit purposes.

The Elixir of Life

In a previous letter (*THE JOURNAL* Jan 13 1923 p. 121) the arrival in London of Dr Conrad Burchardi for the purpose of performing Steinach's operation was announced. An evidently inspired article in the lay press informs us that in the six weeks he has been in London he has had 150 patients among whom are a number of physicians. Dr Burchardi is described as the blond giant from Vienna who is no crank and performs a straightforward operation. He is highly qualified, with diplomas from Heidelberg, Freiberg and Bonn. He is reported to have said 'We cannot cure everybody. The patient must have a sound heart, lungs and liver, and I have had already to turn down about 200 people. The operation is undoubtedly successful in most cases of neurasthenia, and there is no limit to age. I have had cures with men whose ages varied from 28 to 78. On women, we cannot operate. In their case, roentgen ray treatment is necessary but also is successful. I had the pleasure of enabling a society woman to return to the abandoned joys of the hunting field.' Dr Burchardi is described as born in Vienna of Danish parents, the grandson of a former prime minister of Denmark. He says that he is quite prepared to lecture to the profession. So far, neither the profession nor its journals have taken any notice of his work.

Dangerous Drugs Regulations in Victoria

New regulations governing the manufacture, sale, possession and distribution of certain poisonous drugs have come into force in Victoria. Poisons are divided into three classes: dangerous, specified and potent drugs. The first class includes morphin, cocain, ecgonin, diamorphin and other opium preparations provided the preparation contains not less than 2 per cent of cocain, ecgonin or diamorphin. The only persons authorized to possess, sell or distribute dangerous drugs are registered physicians, dentists, pharmacists, veterinary surgeons, licensed dealers in poisons, persons holding a special permit and licensed manufacturers. Records must be kept of all purchases and sale, and the names and addresses of all purchasers must be entered. Dentists and veterinary surgeons are required to indicate on prescriptions that the drugs are required for local dental or animal treatment as the case may be. A physician must indicate on his prescription 'human' or 'veterinary'.

tion may be dispensed, the number being limited to four. The prescription must be stamped or marked on each occasion on which it is dispensed, and when dispensed for the last time, as indicated by the maximum number marked on the script, the pharmacist must stamp or write the word "canceled" across the prescription.

When a prescription is dictated either over the telephone or over the counter, a written and signed prescription must be delivered to the pharmacist without delay. The prescription must bear the full signature in writing (a rubber stamp may not be used for this purpose), the date, and the name of the patient. Physicians who dispense their own prescriptions must keep records of all stocks of the drugs named and of all use of them. The second class (the specified drugs) includes chloral, ergot, paraldehyd, diethylbarbituric acid and sulphomethane. The pharmacist may not dispense prescriptions containing them more than twice unless the physician indicates the number of times they may be dispensed. After the prescription has been dispensed the maximum number of times, it must be marked "canceled." These drugs may not be supplied without a physician's prescription, but they may be sold to nurses in immediate charge of a public hospital or a nurse employed by the Victorian Bush Nursing Association, on a written order of a medical officer of this association. The third class (potent drugs) includes acetanilid, suprarenal, pituitary and thyroid extracts, serums or vaccines, and oil of tansy. These drugs may be sold by a pharmacist or licensed dealer in poisons, provided the label carries the words "This preparation is a potent drug and care must be exercised in using it."

PARIS

(From Our Regular Correspondent)

Jan. 19, 1923

Prohibition in America

I have already referred to the campaign against prohibition that is being waged in the European press, and to the ridiculously exaggerated stories that the newspapers are printing on the subject (*THE JOURNAL*, July 24, 1920, p. 255 and April 2, 1921, p. 947). Dr. G. Limossier, of the editorial staff of the *Paris medical* recently began in the journal he represents a series of articles entitled, "In Dry America." He also makes reference to recent fantastic accounts that have appeared in the daily papers, which tend to discredit prohibition in general. For instance, a telegraphic dispatch dated New York, October 13, which has made the rounds of the press, affirms that prohibition has increased the number of deaths from alcohol. The number is said to have increased from eighty-three to 173 for an equal period of time. Limossier states that such a result is too improbable to be convincing, but the opponents of prohibition lose no opportunity to emphasize that the Americans, no longer having ready access to alcoholic beverages of good quality such as are found in profusion in the cabarets of France, have recourse to adulterated products, with the result that many deaths ensue. A few weeks ago, a popular illustrated journal stated that the majority of the American people regarded with impatience all Draconian legislation and that not a week passes without some secret depository of whisky being pillaged by the mob. These disorderly scenes are said often to degenerate into regular pitched battles. In order to arouse the imagination of its readers still further the journal printed a large colored picture representing a crowd in a street of New York fleeing after such a raid. The fugitives have their arms full of the stolen good while many bottles lie broken on the ground, a policeman personifying hideous prohibition is beating a woman crazed with drink. As Limossier remarks all those in France (and the number is very great) who directly and

indirectly, make their living from the sale of alcoholic beverages have an interest in spreading the belief that prohibition is a failure, for, in case it proves a success in other countries, a contagious influence on France is feared. On the other hand, nearly every person in France has been reared from childhood with the false idea that wine is a generator of energy and strength quite indispensable to manual laborers and mental workers alike. In view of such mentality, it is only natural that they have wrong conceptions in regard to prohibition. Even those who do not make almost a religious cult of their wine worship, and do not regard wine as indispensable, are so accustomed to the hesitating policy of our public authorities that they are not a little surprised at the heroic decision of the American people. They are therefore ready to believe the newspapers that tell them that prohibition in America meets with great resistance and brings about disastrous results.

The Future Problems of Chemotherapy

At the close of his term as president of the Academy of Medicine, Professor Behal delivered an address on the role of chemistry and the part it should play in therapeutics. He holds that the time has arrived when chemistry should be applied to the study of organotherapeutic products, vitamins, and even serums. Practitioners cannot give too much attention to the use of organotherapeutic medicaments. It is true that it is difficult to determine the dosage, for the reason that the active principles that the medicaments contain are not fully known and understood, which gives rise to much uncertainty in their use. Being derived from the organs of different animals, sometimes not belonging to the same species, their therapeutic activity may be highly variable. It should be noted that some organs contain a reserve supply of the active principle, and that others, on the contrary, contain only a very small amount, which is generated, from time to time as needs require. Certain glands possess multiple functions depending on the diverse products that they elaborate, and it would be possible for one of these secretions to be, therapeutically, an antagonist of another produced by the same gland. In some glands the quantity of active products that they contain seems to vary greatly. Thus, Kendall has discovered that the quantity of thyroxin in the thyroid gland of the hog, during the months of January, February and March, is so slight that practically none can be extracted.

Viewing the matter from another angle since the effects of some organotherapeutic products cannot be perceived except after some time has elapsed, it seems advisable to consider whether troubles may not develop that will escape observation. Has not the administration of thyroid gland, which produces such marvelous results in myxedema, sometimes occasioned grave accidents?

Behal has no intention of advising that the use of these products be discontinued, for some of them have an incontestable value, but he holds that there is urgent need of trying to establish the correct dosage of their active components. It would be better still to isolate them and reproduce them synthetically. Isolation does not seem impossible, for most of these products cannot be very complicated, to judge of them after their analogy with the definite active principles of plants. The greater the number of plants of a given family, or the greater the number of different families, in which a given product may be found, the less complex its chemical structure is and one is entitled, with some appearance of reason to apply the same principle to products produced synthetically by animal cells. Substances of complex chemical composition are found in only one species, one genus or one family. Then, as the number of carbon atoms in substances decreases, we find them in several families and, finally, if their composition is very simple, they are found in

A very large number of families Quinin, which contains twenty carbon atoms, is produced only by certain species of *Cinchona*

Morphin, which contains seventeen carbon atoms, is found only in *Papaver somniferum album*. Atropin is somewhat less complex, and we find it in several genera of the *Solanaceae* family: *Atropa*, *Datura*, *Scopolia*

Tyrosin, which has nine carbon atoms, exists in a large number of plants belonging to widely different families. From this we may conclude that, if the same secretion is produced by animals belonging to different species, it is probable that the active substance is not of great molecular complexity. We have already two examples that confirm this view: epinephrin, produced by the suprarenal capsules and thyroxin, derived from the thyroid glands of mammals.

The same conception is applicable also to vitamins, which are derived from very diverse plants, including brewers' yeast, and to animals that are considered incapable of producing them. Behal cites a fact that shows how much the light of chemistry is needed to elucidate the question of vitamins, which is still so obscure. G. Bertrand has shown recently that an exceedingly minute quantity of zinc is necessary to assure the existence of mice and that a still larger quantity is indispensable for gestation and parturition. If it were not known that the ingested substance is zinc, it would doubtless be regarded as a vitamin. The solution of these various problems cannot be found except through the collaboration of physiologists and chemists. The former must guide the latter in the extraction of the active substances.

MADRID

(From Our Regular Correspondent)

Jan 12 1923

Pasteur Centennial

On December 17, a meeting in honor of Pasteur was held in the Athenaeum. Sr. Salvatella, secretary of education, Professor Carracido, president of the Central University, Dr. Gimeno, professor of medicine, former cabinet member and Spanish representative in the League of Nations, Dr. Maranon, physician in the General Hospital and vice president of the Athenaeum, the French ambassador to Spain, and Professor Pettit representing the Pasteur Institute of Paris were present. Dr. Maranon read an address by Dr. Turro of Barcelona, and other addresses were delivered by Drs. Carracido, Gimeno and Pettit, the last in French. Dr. Pettit made the announcement, received with applause, that the Pasteur Institute had confirmed Dr. Ferran's conclusions as to the saprophytic etiology of tuberculosis, which is a modification of Koch's classical concept. Physicians, who had hitherto paid no attention to Ferran's views, now learned in French what they had overlooked in Spanish. This is not an exceptional occurrence in this country, where we discovered Cajal when his works were translated into Spanish from German.

Leprosy in Spain

Spanish sanitary authorities have had to overcome the indifference not only of politicians but even of physicians. Spanish sanitary work is difficult to overcome in sanitary campaigns and the few physicians who struggle with congress to improve public health conditions are faced with the ignorance of politicians and the distrust of physicians. Dr. Pulido failed to secure from Congress an appropriation of 100,000 pesetas (\$16,000) for the campaign against leprosy. Dr. Fernandez Criado, secretary of the Spanish Dermatologic Society, has therefore now published facts as to the prevalence of the disease in Spain. He stated that, last year, he saw two new cases of leprosy in Madrid. One was a boy, aged 19, who has lived in a suburb of Madrid since he was 2 years old,

and who works for a street paving company. The second was a well-to-do woman, aged 50, who has lived in Madrid more than six years. Neither patient had been in contact with other cases. Four years before, Criado had diagnosed leprosy in another patient, aged 26, who claimed that she had had no previous disease, except a cold in the head during the preceding four years. She was employed as a nurse and before that had been wet nurse in another family. She came from Pastrana, Guadalajara, where there are other leper families. The laboratory confirmed the diagnosis, and the patient disappeared as soon as she learned the nature of her illness. A few months afterward, he came across her in the street.

In Spain, leprosy is either increasing, or diagnosis has improved. The authoritative book on the disease here is Dr. Benito Hernandez La Lepra en Granada. In addition there are several papers by Dr. Azua and a contribution from the late Dr. Garcia del Mazo, which gives the first statistics on leprosy in Spain. Garcia del Mazo compiled 898 cases, which Azua increased to 987, and there are probably over 1,000. No province is free. The colonial wars of a quarter of a century ago and the 1900-1910 immigration of indigents from Latin America caused the appearance of a number of foci in the provinces of Salamanca, Zamora and Leon. This American immigration and the yearly African migration to and from Valencia, Alicante, Murcia and Almeria, to supply farm labor, are responsible for the increase.

The people object to compulsory notification and isolation, the importance of which is appreciated only by physicians. Criado cited the cases of lepers who accept seclusion in San Juan de Dios Hospital at Madrid only when they are absolutely unable to pursue their calling. He mentioned two cases: one patient was suffering from leprous pemphigus and extensive scabious ulcers on the legs, which were dressed with dirty rags; the dressing of the sores was alternated with the sale of fish. The other case was in a pedler. Some time ago a newspaper described a "strike" of more than twenty lepers who ran away from the hospital at Seville as a protest against the poor quality of the food. In Almeria the lepers have the run of the streets, some beg alms, others, better off, visit saloons, and return at night to the hospital, where they sleep in the mortuary. Even Goya has no more gruesome picture. In May 1912, when Criado was in charge of the skin clinic of the Madrid medical school, he saw a patient, from Toledo, aged 45 who appeared strong and healthy. A confluent tuberculoleprous rash covered both thighs. The diagnosis was confirmed by Dr. Azua. There were no cases of leprosy in the patient's native town, and he had probably been infected at one of the Andalusian communities, which he visited regularly as a buyer of cereals and oils, and which are noted as leprous foci. The eruption had begun two months before, and he was treated by a local physician, who prescribed cathartics, bloodletting and restriction of diet. As the tubercles did not vanish, arsenical injections were advised, but they were not given, as the patient went on to Madrid. The local physician was informed of the diagnosis in order to prevent further spread of the disease. The local board of health instructed the patient to stay away from all public places. A pit was dug in a condemned cemetery where the leper was supposed personally to bury all food leftovers, wash and toilet water, and all house refuse. The news soon spread in the small town, and the baker, dairyman and butcher rejected his maid left, the barber refused to cut on him, poor fellow went out, his neighbors ran a mile. Afterward he came in tears to ask for a certificate of freedom from leprosy, which he thought might solve. He had even considered suicide and was kept

by a sense of duty to his wife, who was an invalid, helpless with chronic rheumatism. He solved the problem by disappearing overnight, leaving no clue to his next abode.

In a previous address, Dr Juarros complained that he had lost track of a soldier who had been discharged for leprosy. Criado reported the employment of a leper in the postal service and the fact that in 1912 an attendant in the Ocana penitentiary had leprosy lesions on both legs. To avoid such happenings, he pleaded for better teaching in dermatology, the creation of modern leprosariums, the issuance of proper regulations as to isolation and prevention for patients who prefer to stay at home, and, finally, the redrawing of the leprosy map of Spain.

BUDAPEST

(From Our Regular Correspondent)

Jan 17, 1923

Meeting of the Medical Society of Oebreczen

At the recent meeting of the Medical Society of Oebreczen, Dr Kenez read a paper on obesity from the point of view of etiology. Most commonly the condition is due either to overfeeding or to lack of exercise and frequently these two causes are combined. There is another group of cases in which obesity develops in spite of the fact that food and exercise are taken in proper amounts. This has been termed constitutional obesity. After prolonged discussion and study, the conclusion has been reached that in such cases the oxidation power of the organism is deficient. This, as stated years ago by Professor Noorden, bears a direct relationship to thyroid function. Temporary changes in this gland may raise or depress the power of oxidation. Dr Kenez therefore designated constitutional obesity "thyreogenic obesity," and classified the types as (a) primary thyreogenic obesity dependent on actual changes, such as atrophy, degeneration and functional weakness in the thyroid, and (b) secondary thyreogenic obesity, due to functional anomalies of the thyroid which depend on the action of other organs, such as the pancreas, hypophysis, suprarenals, thymus, and pineal gland. These questions not only have theoretical interest, but also possess important bearings on therapeutics, for anomalies of metabolism known as obesity can be treated rightly only when the origin of the anomaly has been correctly diagnosed.

HYSTERIA AND PSYCHANALYSIS

Dr Paul Grosz objected to the present tendency of many practitioners to treat without judgment all cases of hysteria by psychanalysis. He criticized Freud's theory of hysteria with its many additions. According to Freud, Steckel and Ferenczi the disease is always caused by psychic trauma, which subconsciously continues the neurosis until it is brought into consciousness, when it is cured. Ferenczi has further maintained that the psychic trauma is always of a sexual nature, and agrees with his teacher, Freud, that a "lesion of this description is at the basis of all neuroses and that there is no neurosis without disturbance of sexual life. Dr Grosz pointed out the grave risks of a course of psychoanalytic treatment which often extends over months. He emphasized the uncritical nature of this psychologic or sexual cure as applied to all neuroses.

THE CLINICAL AND MEDICOLEGAL ASPECTS OF IMBECILITY

Dr Strehlinger who studied the clinical and medicolegal aspects of imbecility in the clinic of Professor Sommer in Giessen concluded that 1 Idiots in institutions resemble the inmates of reform schools in many bodily and mental characteristics. 2 It is therefore desirable that there should be a uniform method of investigating all such cases. 3 In judging recalcitrance a great many psychologic and

psychophysical methods might be usefully applied for the purpose of obtaining a better insight into the mental processes in addition to those outlined in the examination blanks.

4 The improved system of classification was valuable medically, psychologically and educationally, moreover, it led to better cooperation between the medical and the educational authorities.

5 The earlier correct inferences are drawn as to the mental capacity and suitability for institutional treatment, the more positively can a case be definitely grouped in accordance with clinical and bodily peculiarities.

6 In the investigation of juvenile delinquency it must be remembered that some inmates of reform schools are obviously imbecile, if these are eliminated, the ordinary methods of investigation often fail to detect the defect, on the other hand, in cases with apparently normal mentality, more particularly as regards intellectual capacity, there are likely to be hysterical and epileptoid manifestations, as well as evidence of moral defect.

7 Possession by a juvenile offender of mental capacity sufficient to comprehend the culpability of an act is a bad sign.

8 When juvenile offenders were of apparently normal mental capacity, the investigation of environmental and inherited characters, and of family circumstances, often led to the recognition of external or internal causes for the delinquency.

9 Analysis of the external or internal factors will probably tend more and more to prove that juvenile delinquency, both in its individual and in its social relations, must be regarded as due to disease.

10 For the practical purposes required in judicial decisions and in questions connected with administrative protection of imbeciles, the particular nature of the defect must be considered first, because the different types exhibit various degrees of educability and unfitness for social existence.

ARTERIOSCLEROTIC NEURASTHENIA

Dr Brokes said that arteriosclerotic neurasthenia is common, especially between the ages of 50 and 55, it is characterized by anxiety and depression (in association with cardiac symptoms), insomnia, heaviness and numbness of the head, fatigability and incapacity for work. On the mental side it is distinguished by apathy, ill humor and irritability. From this stage the transition is gradual to arteriosclerotic dementia, in which the memory is greatly impaired, all psychic processes are slower, the patient becomes stupid, his opinions and judgments are mechanical and elementary, his imagination atrophies, and his will-power diminishes.

BERLIN

(From Our Regular Correspondent)

Jan 20, 1923

International Conference on Standardization of Serums

In December, 1921, an international health conference was held in London, under the auspices of the League of Nations, to discuss the standardization of serums and serum reactions, in December, 1922, a second conference for the same purpose was held in the Pasteur Institute, Paris, at the suggestion and under the chairmanship of Professor Madsen, president of the health committee of the League of Nations. Professor Neufeld, director of the Robert Koch Institute for Infectious Diseases, Berlin, who, with Wassermann, Kolle and Sachs took part in the conference, gives a report of the proceedings in the *Deutsche medizinische Wochenschrift*, Jan 5, 1923. The transactions were carried on by subcommittees. The first dealt with the standardization of tetanus and diphtheria antitoxins. These investigations are nearly complete, and it is expected that an agreement will soon be reached as to a generally acceptable method of titration and standardization. Heretofore not only have other countries used standards (immunity units) different from those of Germany, but there have been fundamental differences in titration

For example in France not only is Ehrlich's procedure used for the titration of diphtheria serum (combinations of toxin and antitoxin), but the effect on living diphtheria cultures is also tested.

A second subcommittee took up the question of dysentery serum which with us, is not required to be tested. It is certain that many unfavorable observations on dysentery serum in Germany have been due largely to the use of defective serums, and that results would be improved by a standard titration approved by the state public health service. Investigations of the antitoxin test on rabbits and mice are still being carried on.

The largest subcommittee, under the chairmanship of Bordet and Wassermann, discussed the serodiagnosis of syphilis, and several reports were read on comparisons between the original method of complement fixation, and the flocculation or precipitation methods of Sachs-Georgi, Meinicke and Dreyer. These investigations are to be continued in certain definite directions by one laboratory of each of the several countries. In Germany there have been many complaints of evils arising from the serodiagnosis of syphilis, and in consequence, an attempt was begun last year to prevent as far as possible the injuries and untoward effects that may arise from the improper application of this delicate and practically important procedure, by adopting an officially recognized and uniform method of application of the Wassermann test. This regulation has encountered considerable opposition, especially from directors of laboratories, and it is hoped that the investigations of the health committee of the League of Nations will be of great value in preparing a revision of existing regulations which will be necessary before long.

Two other subcommittees are engaged in investigation of the antipneumococcus and the antimeningococcus serums, respectively. With regard to the former, the subcommittee expressed the opinion that an opinion as to their efficacy would at this time be premature, however, we possess reliable methods of titration and if antipneumococcus serums of high value according to these standards are tested in pneumonia cases which are not too far advanced, we may expect, within a reasonable time, a final and reliable judgment on the value of this form of serotherapy.

With the antimeningococcus serums, serotherapy is likewise much complicated by the fact that there are several different types of causative agent, and corresponding variations in antibodies. In Germany the state has already established standards for meningococcus serum. These standards, however give no consideration to the different serologic types, and there is therefore need for revision. Cultures and serums of the various types of organisms are being exchanged by the laboratories conducting the investigation, and the question as to what antibodies (bacteriotropins, antiendotoxins, agglutinins, antibodies causing complement fixation) shall be used to establish the titer of a given serum is being studied according to definite standards set up by the committee. We should await the results of these investigations before we revise the official standards in Germany. This is an exceedingly important practical question, for in the opinion of Professor Neufeld, the antimeningococcus serum is possibly the most effective therapeutic serum yet used in the treatment of human diseases.

Amplified Audibility of Heart Sounds

Refinements in the technic of electric high tension currents have served as a stimulus to physicians to attack the problem of utilizing these currents for the clearer elucidation of the heart sounds. In an address before the Medizinische Gesellschaft recently, Dr. Leo Jacobsohn explained his experiments in this direction. He uses a type of vacuum tube such as

is employed in wireless telegraphy for the amplification of impulses, and which burns like an incandescent lamp. With a comparatively small apparatus sound units can be amplified a thousandfold or more. For instance the ticking of a watch can be heard from the farthest corner of a large hall. Dr. Jacobsohn places a microphone on the chest and with his apparatus every one in the room can hear the heart sounds distinctly. They are not as yet perfectly clear but this was true for the first impulses transmitted by the first telephone or the first phonograph but even now the volume of the separate sounds, their rhythm and their frequency can be presented simultaneously to a good sized audience. In the administration of anesthetics, an assistant to watch the condition of the pulse can be dispensed with and in dealing with a difficult obstetric case the physician can be informed by a bell signal whether the fetal heart is still beating.

Death of Johannes Orth

Professor Orth, for many years director of the Berlin Pathologic Institute, died recently just one day before his seventy-ninth birthday. During recent years he had suffered much from gallstones and a few years ago Bier removed the gallbladder. In spite of this operation, he had frequent attacks of fever but the immediate cause of death was given as cardiac insufficiency. He resigned his position as director soon after his seventieth birthday. He was the successor of Virchow and he performed the duties of the post in the spirit of his great teacher. Orth distinguished himself as did Virchow by a very strong sense of responsibility to the scientific world and exhibited painful exactitude in his scientific investigations and publications. Only the most complete conviction of the reliability of his findings could ever induce him to bring his researches on a given problem to a close and to make his results known to his fellow scientists. In his entire personality as well as in his scientific work he was upright and influenced in his opinions and acts solely by love of truth and not by personal considerations. He therefore enjoyed the esteem of all men of science. In addition, he won the admiration of those who did not allow themselves to be affected by his gruff outward manner but penetrated the rough exterior and learned to know the kind heart that lay beneath. His scientific researches extended to most branches of pathologic anatomy and pathology. In recent years he devoted himself more especially to research on tuberculosis and cancer. In his studies on tuberculosis he opposed Robert Koch's belief in the slight importance of bovine tuberculosis. Probably the last article he wrote was on tuberculosis and appeared in the *Deutsche medizinische Wochenschrift* Oct 27, 1922 p 1437 under the title 'The Problem of the Unity or the Duality of Tuberculous Processes in the Lung'. He devoted much attention to infectious diseases. His textbooks have been widely used especially *Pathologisch-anatomische Diagnostik* which appeared first in 1876 and was followed by many subsequent editions. In this work particularly we find evidence of Orth's great capacity for scientific instruction and delineation. In exceedingly clear and concise form he gives only the established facts of pathologic diagnosis. I still remember with gratitude the great benefit that I derived as a student from this book. His large textbook on *Spezielle pathologische Anatomie* was unfortunately not completed. Orth was the first pathologist to be admitted to the Prussian Academy of Sciences. Like Virchow he served for many years as president of the *Berliner medizinische Gesellschaft* and after withdrawal from active participation two years ago he was appointed president emeritus. Among other official positions he held the office of vice president of the Kaiser-Wilhelm-Foundation for the Combating

Marriages

THEODORE L. HAZARD, Iowa City, Iowa, to Miss Nellie Maude Black of Drummond, Okla., at Kansas City, Mo., January 22

FORREST NELSON ANDERSON, Lawrence, Kan., to Miss Anna E. Spradling of Kansas City, Mo., January 20

ALFRED E. P. ROCKWELL, Worcester, Mass., to Dr. KATHERINE FRENCH of Framingham, January 15

HERBERT A. BRADY to Miss Elizabeth M. Goble, both of Grand Rapids, Mich., January 10

ELDO HORACE M. CLAUSER, Muncie, Ind., to Miss Cora Benson of Westfield, January 19

EDWARD WALTER ST. PIERRE to Miss Marjorie McGuire, both of Portland, Ore., December 16

LEON BLOCK, Denver, to Miss Bertha May Levy of Ocean Springs, Miss., January 7

CARROLL LEE SMITH to Miss Lucille Barrett, both of Spokane, Wash., January 27

WILLIAM F. BECKER to Miss Bertha Dudgey, both of Milwaukee, December 23

A. R. SPINDLER to Miss Ethel Blanche Hoyt, both of Akron, Ohio, January 19

L. B. WARD, Shaw, Miss., to Miss Vivian McCool of Greenville, January 5

Deaths

Caroline M. Purnell, Philadelphia, Woman's Medical College of Pennsylvania, Philadelphia, 1887, member of the Obstetrical Society of Philadelphia, associate professor of gynecology at her alma mater, special commissioner for the American Women's Hospitals in France during the World War, gynecologist to the Woman's Hospital, the West Philadelphia Hospital for Women, the Friends' Hospital, the Norristown State Hospital for Insane, Norristown, and the State Hospital for Chronic Insane, Wernersville, aged 57, died, February 3

Clinton Wayne Kelly, Louisville, Ky., McGill University Faculty of Medicine, Montreal, Que., Canada, 1867, emeritus professor of anatomy at the University of Louisville Medical Department, Louisville, Civil War veteran, practitioner in Louisville for more than a half a century, aged 78, died, January 26, from pneumonia

Luman Moody Giffin, Boulder, Colo., Rush Medical College, Chicago, 1875, emeritus professor of surgery and dean from 1883-1911 of the University of Colorado School of Medicine, at one time superintendent of the University Hospital (Community Hospital), aged 72, died, January 23, from cerebral hemorrhage

David William McPherson, Toronto, Ont., Canada, University of Toronto Faculty of Medicine, Toronto, 1895, lieutenant-colonel, Canadian Army Medical Corps, served during the World War in France and England, aged 51, died recently, at the Wellesley Hospital from bronchopneumonia

Frank Green Simmons, Richmond, Va., Vanderbilt University Medical Department, Nashville, Tenn., 1890, member of the Medical Society of Virginia, formerly instructor of pediatrics at the Medical College of Virginia, Richmond, aged 53, died, January 27, following a long illness

Anna R. Osmond, Philadelphia, Woman's Medical College of Pennsylvania, Philadelphia, 1897, formerly on the staff of the Woman's Hospital of Philadelphia, and for twenty years physician to the woman's department of the Philadelphia County Prison, aged 65, died, February 1

Walter Guy Law, Ashland, Wis., Rush Medical College, Chicago, 1896, member of the State Medical Society of Wisconsin, served in the M. C. U. S. Army during the World War, with the rank of captain, aged 50, died suddenly in his office, January 25, from cerebral hemorrhage

Charles Victor Fisher, Klamath Falls, Ore., Willamette University Medical Department, Salem, 1898, member of the Oregon State Medical Association and the Pacific Coast Oto-Ophthalmological Society, aged 52, died, January 19, from carcinoma of the prostate

Oscar George Cowley, Saginaw, Mich., Detroit College of Medicine and Surgery, Detroit, 1904, member of the Michigan State Medical Association, aged 41, on the staff of the Woman's Hospital and the Saginaw General Hospital, died, January 30, from heart disease

Myron Edwin Lane, Chicago, College of Physicians and Surgeons, Chicago, 1887, formerly on the staff of St. Joseph's Hospital, New York City, member of staff of the Chicago Municipal Tuberculosis Sanitarium, aged 60, died, January 17, from heart disease

Daniel Hopkinson, Milwaukee, Wis., Milwaukee Medical College, 1901, member of the American Society of Clinical Pathologists, professor of pathology at Marquette University School of Medicine, state pathologist, aged 46, died suddenly, February 1

Alexander Horton Travis, New York, Medical Department of Columbia College, New York, 1887, formerly on the staff of St. Joseph's Hospital for Consumptives, aged 60, died, February 1, from cerebral hemorrhage

Frederick A. Dudley, King Ferry, N. Y., Yale University School of Medicine, New Haven, Conn., 1862, formerly member of the state legislature, Civil War veteran, aged 81, died, January 14, from senility

Elmer Harley, Seeley, Calif., University of Colorado School of Medicine, Denver, 1914, member of the Medical Society of the State of California, aged 46, died, January 28, from pulmonary tuberculosis

George T. Shower, Baltimore, Hahnemann Medical College of Philadelphia, 1882, formerly president of the state homeopathic society, Civil War veteran, aged 81, died, February 2, from senility

Griffy Benjamin Ward, Fairbank, Iowa, University of Michigan Medical School, Ann Arbor, 1880, member of the Iowa State Medical Society, aged 65, died, January 27, from heart disease

John Edward King, Eldora, Iowa, Hahnemann Medical College and Hospital of Chicago, 1867, former president of the state homeopathic association, aged 97, died, January 23, from senility

William Oliver Skinner, Griggsville, Ill., University of Pennsylvania School of Medicine, Philadelphia, 1874, member of the Illinois State Medical Society, aged 74, died, January 26

Willard Shepard Everett, Newton, Mass., Medical School of Harvard University, Boston, 1864, member of the Massachusetts Medical Society, aged 91, died, January 31, from senility

John Henry McMullan, Edenton, N. C., University of Maryland School of Medicine, Baltimore, 1876, aged 73, died, December 10, at Norfolk, Va., following an appendectomy

Edwin DeMoss Lunn, Houston, Texas, Medical Department University of Louisville, Louisville, Ky., 1890, aged 51, died suddenly, January 20, from carbolic acid poisoning

G. C. Chandler, Shreveport, La., Medical Department of the Tulane University of Louisiana, New Orleans, 1888, for ten years city health officer, aged 57, died, January 25

Edwin Elvin Deal, Winchester, Mass., Medical School of Harvard University, Boston, 1890, member of the Massachusetts Medical Society, aged 57, died, January 21

Frank Edwin Moyer, Montpelier, Ind., University of Michigan Medical School, Ann Arbor, 1894, aged 59, died, January 23, from heart disease and arteriosclerosis

Frederick D. Porter, Chicago, Detroit Medical College, Detroit, 1877, member of the Illinois State Medical Society, aged 72, died, February 4, from heart disease

James M. McCallum, Leeds, S. C., Medical College of the State of South Carolina, Charleston, 1859, Confederate veteran, aged 87, died, January 21, from senility

Walter Alexander Rose, Rochester, Pa., University of Buffalo (N. Y.) Department of Medicine, 1867, aged 80, died, January 1, from bronchopneumonia

Donald W. Campbell, Atchison, Kan., University of Michigan Medical School, Ann Arbor, 1880, aged 60, died suddenly, January 20, from heart disease

Henry Gerkey Pyle, Long Beach, Calif., Cleveland University of Medicine and Surgery, Cleveland, 1894, aged 56, died, January 15, from carcinoma

James Eneu Loughlin, Norwood Station Pa, Jefferson Medical College, Philadelphia, 1868, aged 76, died, January 27, from cerebral hemorrhage

Harrison Pettit Huntsinger, Pinckneyville, Ill, Rush Medical College, Chicago, 1879, Civil War veteran, aged 80, died January 22, from senility

Stanley P Newsham, Westville, N J, University of Pennsylvania School of Medicine, Philadelphia, 1869, aged 73, died, January 27, at Camden

Joseph Palmer Johnson, Lynn Haven Fla, Rush Medical College, Chicago, 1876, Civil War veteran, aged 84, died, December 9, from senility

Irving Smith Coburn & Milton, Vt, Baltimore Medical College Baltimore 1901, state senator, aged 48, died, January 20, from septicemia

Charles McKenna, Toronto, Ont, Canada, University of Toronto Faculty of Medicine, Toronto, 1865, aged 78, died January 8, from senility

Scott Harrison Abbott, McKinley, Texas Eclectic Medical Institute, Cincinnati, 1883, aged 64, died, December 22, from chronic nephritis

Charles P Brightwell, Macon, Ga, University of Georgia Medical Department, Augusta, 1899, aged 47, died December 25, from influenza

Valentine Kocinski, Cleveland Warsaw Medical College Warsaw, Russia 1887, aged 65, died, January 22, from bronchopneumonia

Fred Clinton Thornley, Newark, N J, Jefferson Medical College of Philadelphia, 1888, aged 57, died, January 24, from mastoiditis

J H Forest, Murray, Ky, Medical Department University of Tennessee Memphis, 1896, aged 68, died, December 11, from pneumonia

Howard R Hopkins, Hillsboro, Md, Jefferson Medical College of Philadelphia, 1882, aged 70, died, January 25, from influenza

William Henry Martin, Poindexter Ky, Jefferson Medical College of Philadelphia, 1851, aged 92, died, January 23, from senility

Edwin H Hayes, Chicago, Hahnemann Medical College and Hospital of Chicago, 1884, aged 72, died, February 11, from pneumonia

James A Lyons, Appleton, Wis, College of Physicians and Surgeons, Chicago, 1894, aged 56, died, January 19, from heart disease

George Edward Potter, Irvington, N J, Eclectic Medical Institute Cincinnati 1880, aged 67, died, January 23, from encephalitis

Samuel Finley Smith & Indian Orchard Mass, University of Michigan Medical School, Ann Arbor, 1873, aged 75, died, January 22

J Epps Pegram, Tiptersville, Miss (licensed, years of practice), aged 72, died, December 24, from intestinal obstruction

Eugene Henry Howard & Pittsfield, Mass, Medical School of Harvard University, Boston, 1898, aged 49, died, January 19

Calvin F Hess & Madison Wis, Rush Medical College, Chicago, 1894, aged 57, died, January 2, at St. Petersburg, Fla

William Wade Ray, Springfield, Ky, Bellevue Hospital Medical College, New York, 1877, aged 70, died, January 18

Charles A Stammel, Cincinnati, Medical College of Ohio Cincinnati, 1896, aged 63, died January 29, from paralysis

Theodore Cole, Lansing Mich, University of Michigan Medical School, Ann Arbor, 1869, aged 81, died, December 19

J R Howell, Florence, Ala, Memphis Hospital Medical College Memphis, Tenn, 1888, aged 71, died, January 24

Joseph C Hughes, Ottawa Kan Starling Medical College Columbus, Ohio 1869, aged 79, died, January 24

Samuel E Reynolds, Clay Center Kan, Medical College of Ohio, Cincinnati, 1873, aged 77, died, January 22

John William Huffman, Prescott, Iowa, Medical College of Ohio, Cincinnati, 1879, aged 72, died January 15

Jacob D Graybill, New Orleans, Pulte Medical College, Cincinnati 1878, aged 74, died February 1

Isaac L Davis, Walling Tenn (licensed, Tennessee, 1889), aged 74, died January 14, from senility

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNALS BUREAU OF INVESTIGATION OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

BROWN'S NEW CONSUMPTION REMEDY

The Post Office Department Effectively Protects the Public from Another Fraudulent Consumption Cure

On Feb 2, 1923, Postmaster General Work issued a fraud order against D H Brown, M.D., of Jacksonville and St Augustine Fla, and Brown's Magnolia Remedy Company Brown who is a negro, was, according to our records, born in 1868 and graduated by the Meharry Medical College at Nashville, Tenn in 1898, receiving a Florida license in 1899 For some time he has been advertising an alleged consumption cure under the name Dr Brown's New Consumption Remedy He has made his appeal especially to those unfortunate members of his own race who are afflicted with tuberculosis

BROWN ADMITTED FRAUD IN 1917

As long ago as November 1916 the federal authorities got after Brown under the federal Food and Drugs Act The officials of the Department of Agriculture charged that the claims that this preparation was a remedy for consumption pneumonia la grippe and all diseases of the lungs and bronchial tubes were false and fraudulent In December 1917 Brown pleaded guilty and was fined a trivial \$50 and costs The case was reported in this department of THE JOURNAL Feb 22 1919 Presumably after his brush with the Food and Drugs Act Brown ceased making his lying and fraudulent claims on the trade package but continued making them in newspaper advertisements and in circulars that were sent to those who answered these advertisements The scope of the federal Food and Drugs Act unfortunately, does not extend beyond the claims made on or in the trade package

THE POST-OFFICE ACTS

Fortunately for the public the Post-Office Department was able to reach Brown and in October, 1922 charges were filed against him and Brown was called on to show cause on or before Nov 9 1922 why a fraud order should not be issued against the Magnolia Remedy Company Through his attorney, Cromwell Gibbons of Jacksonville Brown asked that the hearing in the case be postponed until after November 21 this postponement was agreed to and November 23 set as the date for the hearing

At that time Mr Gibbons appeared at Washington and before any evidence was offered indicated that his client would be perfectly willing to eliminate those features of his business that were objectionable The attorneys for the government replied that if Brown would cease making claims for his preparation to the effect that it would cure consumption bronchitis pneumonia la grippe and influenza and would do no more than represent that the nostrum had expectorant and alternative value in the treatment of cold coughs etc the matter might be disposed of On this basis the hearing was adjourned in order that Brown might submit revised literature on or before Dec 11 1922 An extension of time was again asked by Brown to Jan 2 1923 Just before this date Brown's attorney forwarded to the Post Office Department a statement by Brown in which the man attempted to justify the fraudulent claims made in his literature Brown was told through his attorney that unless he filed with the department on or before January 22 his revised literature and advertising matter the case would again be taken up Another postponement was made at Brown's request until January 24 when the matter came up for hearing

THE INEVITABLE

A sample of the preparation the mail was filed in evidence

with a report by Dr L F Kebler, Chief of the Drug Division, Bureau of Chemistry, U S Department of Agriculture. In addition to Dr Kebler's testimony, William F Kunke, the chemist who analyzed the preparation, testified on behalf of the government. Brown's attorney offered the usual batch of testimonials from persons claiming to have been benefited by taking the preparation and the attorney also examined Dr Kebler on certain alleged medical authorities dealing with the use of creosote in the treatment of tuberculosis. In his answer to the government's charge, Brown had stated that his nostrum consisted principally of "a compound of creosote, Donovan's Solution and extract of malt." The federal chemists testified that the preparation had been especially tested for arsenic and mercury, the two drugs that are in Donovan's Solution (Liquor Arseni et Hydrargyri Iodidi) and it was definitely established that those drugs were not present. The chemists found that the principal ingredients of Brown's nostrum were creosote and maltose.

The government produced statements from a number of well-known physicians, specialists in the treatment of tuberculosis, regarding the uses and limitations of creosote in the treatment of that disease. The physicians were unanimous in declaring that creosote is not in any sense a cure for tuberculosis and that this fact is universally accepted by those who specialize in the treatment of this disease. Brown, in his defense, quoted from an alleged medical authority to justify his claims. The quotations were taken from an old book on *materia medica*, the last edition of which was issued more than a quarter of a century ago. Even this book did not claim that creosote was a cure for tuberculosis.

In view of all the evidence, the Hon H J Donnelly, Acting Solicitor of the Post Office Department, recommended in his memorandum to the Postmaster General that a fraud order be issued against the Magnolia Remedy Company and also D H Brown. The order was issued.

Correspondence

"THE CARE AND FEEDING OF INFANTS"

To the Editor—In your statistics relating to breast-fed and bottle-fed babies, I see nothing definite with regard to mothers. Through long years of experience I have found that very few mothers who are in good health fail to nurse their babies. Then, in giving statistics of deaths from bottle feeding and breast feeding, why not take into consideration the fact that nonstrenuous mothers beget nonstrenuous babies, and that this fact may cause the difference in the statistical death rate—weakness?

J J LEISER, M D, Lakebay, Wash

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

MADURA FOOT

To the Editor—I should like to get all available information concerning mycetoma (*Madura foot*). I should like to know whether any cases of this disease have been reported in this country. I have a faint idea that some cases were reported from Texas. A. F C Florida

ANSWER—Two cases of mycetoma were reported recently from Texas by Pagenstecher (*THE JOURNAL*, May 6, 1922, p 1363). In his article on *Madura foot in America* (*Ann Surg* 66 496 [Oct] 1917), Winslow stated that until the publication of his paper, there had been reported seven cases of this condition in the United States and Canada. Three had occurred among Mexicans living in Texas, one in a French-Canadian living in Canada, one in a young man born in Iowa, one in a girl living in Kansas, and one in an Italian who had been in this country for several years. In addition to Winslow's and Pagenstecher's papers and the

standard textbooks on tropical diseases, the following references may be consulted:

- Adam and Kirkpatrick *Tr Am Phys* 1895
Hyde, Senn and Bishop *J Citan & Gen Urin Dis* 45 1, 1896
Sutton R L *Mycetoma in America THE JOURNAL*, May 3 1913, p 1339
Burres W T *Madura Foot in Western Panama, Am J Trop Dis* 3 611 (May) 1916
Solari E F *Madura Foot in Argentina Semana Méd* 24 573 (Nov 22) 1917 abstr *THE JOURNAL* March 30 1918 p 967
Navarro, Horatio *Madura Foot Report of a Case THE JOURNAL* Sept 21, 1918 p 967
Diaz Albertini and Desvernine *Madura Foot in Cuba report to the Third Pan American Congress 1901 Sanidad y Beneficencia* March April 1918 p 319 abstr *THE JOURNAL*, March 15 1919 p 817
Welchman W and Pirie J H H *South African Case of Mycetoma M J South Africa* 17 6 (Aug) 1921 abstr *THE JOURNAL* Oct 15 1921 p 1288

A letter was published by Dr Mark F Boyd of Galveston, Texas, in *THE JOURNAL*, Nov 6, 1920, p 1286, requesting that he be informed of unreported cases of mycetoma, as he was compiling data on the subject.

DEATH FROM ELECTRIC SHOCK FROM HOUSE CURRENT

To the Editor—I was called recently with Dr F W E Henkel of this place to see a man aged 53 height 5 feet 10 inches weight about 180 pounds who was reported to have received an electric shock. On arrival we found that he had been dead for a number of minutes and all efforts at resuscitation failed. He had been sorting apples in an outside cellar and the floor and his feet and clothes were wet. He clutched an electric lamp in his hands which were held tightly on his chest. No marks were found on the body. The lamp was a 75 Watt Type C Mazda attached to the ceiling by a long No 18 lamp cord. The fuses at the meter were not of more than 30 amperes. The lamp was still burning when the first man reached the spot and was not blackened. The fuses were intact. The current is brought to the ranch at 2300 volts and transformed to 110 volts for lighting purposes. It is alternating 60 cycle. The day was stormy with snow and some wind. The injured man had always been strong and had not complained in the last few months. There was no necropsy. We wish to learn whether death from a 110 volt current is at all common as we never before heard of a well authenticated case.

W J LEROSSIGNOL M D Rifle, Colo

ANSWER—Death from shock by a 110 volt electric current is not an uncommon accident. Indeed, it has been said that no current at a pressure of more than 50 volts is really safe. Alternating currents are more dangerous than direct currents. Accidents of this kind are prone to occur when the skin is moist and the body is in contact with a good "ground." They have been somewhat frequent when electric bulbs or sockets have been handled when the person was in the bath tub. Several reports of fatal accidents of this kind have been recently abstracted in *THE JOURNAL*.

- Balthazard V *Electric Accidents from House Currents Paris méd* 12 361 (Oct 21) 1922 abstr *THE JOURNAL* Dec 30 1922 p 2255
Zimmern A *Electric Accidents with House Currents, Bull de l'Acad de méd* 87 155 (Feb 7) 1922, abstr *THE JOURNAL* March 25 1922 p 925
Langlois J P *Electric Accidents with House Currents Bull de l'Acad de méd* 87 158 (Feb 7) 1922, abstr *THE JOURNAL* March 25 1922 p 925
Zimmern A *Electric Accidents with House Electric Current Presse méd* 28 25 (Jan 10) 1922, abstr *THE JOURNAL*, Feb 28 1920 p 635
Heydrich C *Fatal Accident from Contact with Low Tension Wires Zentralbl f Geaerbelg* 8 239 (Dec) 1920
Mieremet C W G *Death from Shock from Incandescent Bulb Nederlandsch Tijdschr v Geneesk* 2 1951 (Dec 1) 1917 abstr *THE JOURNAL* March 2 1918 p 661
Morrow C H *Accidental Electrocution by a Weak Current THE JOURNAL* June 13 1914, p 1889

CAUSE OF ITCHING IN WOUND HEALING

To the Editor—What is the cause of the itching sensation so frequently felt in wounds that are healing?

ADOLF BOWSKI, New York

ANSWER—Sensations of itching are due to stimulation of nerve endings in the skin. Physiologists are not agreed as to whether the nerve endings involved in this sensation are specific, or whether, as some maintain, they are identical with those that serve for touch, and the itching is the result of overstimulation. In a wound that is healing, the local reaction or inflammation results in a state of hypersensitivity in the nerve endings, with the consequence that such stimulations as are caused by contact with dressings or air currents, or even possibly by the increased circulation, will give rise to sensations. When the wound is recent or infected and not healing, the shock or the tonic effects render the nerve endings hyposensitive, and it is only when a more healthy state appears in the wound that function is resumed, and it is often temporarily overactive.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA Juneau March 6 Sec Dr Harry C De Vigne Juneau
IDAHO Boise April 4 Dir Mr Harry L Fisher Boise
IOWA Des Moines March 8-10 Sec Dr Rodney P Fagen State
House Des Moines
MAINE Portland March 13-14 Act Sec Dr Adam P Leighton
192 State St, Portland
MONTANA Helena April 3 Sec Dr S A Cooney Pover Bldg
Helena
NEW HAMPSHIRE Concord March 9-10 Sec Dr Charles Duncan
Concord

REPORT OF THE FOURTEENTH EXAMINATION OF THE NATIONAL BOARD OF MEDICAL EXAMINERS

The fourteenth examination of the National Board of Medical Examiners was held in twenty-two Class A medical schools Sept 25, 26 and 27, 1922, in Part I, which comprises written examinations in each of the six fundamental medical sciences. The subjects of the examination and the relative value of each were anatomy, 100, physiology, 75, materia medica and pharmacology, 75, pathology, 75, physiologic chemistry, 50, and bacteriology, 50, making a total of 425 counts for this part.

Part I

A candidate taking Part I must earn at least 75 per cent of this total. The number of counts earned in any subject depends directly on the ratings of the answered papers. Falling below 65 per cent in two subjects, or below 50 in one subject, constitutes a failure.

Under the new plan of examination, a candidate is allowed to take an incomplete examination, omitting one of the subjects if the instruction in this subject is not completed in the medical school of attendance by the end of the second year.

One hundred and fifty-nine candidates appeared for examination in Part I, of these, ninety-six passed, twenty-seven took an incomplete examination and thirty-eight failed to pass the examination.

EXAMINATION PART I

ANATOMY

Answer eight questions out of the ten. 1 Discuss ovulation, menstruation and fertilization. 2 Discuss epithelial and connective tissues. 3 Make a diagram of the lymph glands of the axilla naming regions drained. 4 Make a diagram of the lumbar plexus labeling fully. 5 Describe the eyeball and its structures. 6 Describe the liver. 7 Describe the shoulder joint. 8 Make a diagram showing the topography of the liver, gall bladder and their ducts. 9 Draw a medial sagittal section of the pelvis in the female label all structures. 10 Describe the nervous mechanism involved in seeing.

PHYSIOLOGY

Answer any five questions. 1 What are the advantages and disadvantages of physiologic salt solution when injected intravenously under conditions of dangerously low blood pressure? 2 Describe the venous pulse giving the cause of the various waves which form it. 3 Describe the circulatory and respiratory reactions which attend the breathing of 5 per cent carbon dioxide. 4 Describe the movements of the stomach. 5 What is meant by the filtration and absorption theory of urine production? 6 Define (a) respiratory quotient (b) alveolar carbon dioxide (c) alkaline reserve.

PHYSIOLOGIC CHEMISTRY

Any five of these questions may be answered. 1 Give in detail (a) the chemistry of the red blood corpuscle (b) the chemistry of the white blood corpuscle. 2 Discuss (a) the chemistry of striped muscle (b) the chemistry of the gray matter of the brain. 3 Give (a) the chemistry of bone (b) the chemistry of cartilage. 4 Discuss the chemical functions of the liver. 5 Discuss the chemistry of the thyroid gland and describe its functions. 6 Discuss the chemistry of bacterial cells. 7 Give the chemistry of the fats which we ordinarily eat and discuss the chemical changes which take place in the fatty molecules during digestion, absorption, assimilation and elimination. 8 Give the most prominent theories concerning anaphylaxis or protein sensitization. 9 Starting with CO₂ as present in exhaled air follow the carbon atom through the plant and through the animal until it is returned to the air as CO₂. 10 Trace the sulphur atom taken into the body when eggs are eaten through its digestive absorption, assimilation and elimination changes.

PATHOLOGY

Answer any five of these seven questions. 1 Describe the structure of a thrombus. How may a thrombus be distinguished from a post-mortem clot? 2 Describe changes which occur in association with cirrhosis of the liver, omitting those which occur in the liver itself. 3 Describe the fate of bone which has undergone necrosis as the result

of osteomyelitis. 4 Describe conditions under which phagocytes occur in human pathology. State how the process is modified by factors on the side of the phagocyte and cite evidence in proof of the statement. 5 Under what conditions does cerebral softening occur? Describe the changes which are found and the end result should death fail to occur. 6 Describe in some detail the healing of a tuberculous lesion of the lung of a lymph node. 7 Discuss the pathology of heart block.

BACTERIOLOGY

Answer any five of these six questions. 1 (a) What is meant by pH as used in measuring acidity and alkalinity? (b) To what pH point would you adjust the reaction of culture mediums for general bacteriologic purposes? (c) Discuss acidity and alkalinity as they affect the metabolism of bacteria. 2 You are called on to assist in the management of a threatened epidemic of diphtheria in a home for children containing 100 children. Three children about 6 years of age are all one moderately not later than the second day of the disease the second more severely third day the third extremely ill about the fifth day. (a) How will you confirm the diagnosis? (b) How will you treat each sick child including dosage and methods of administration of therapeutic agents prescribed? (c) What steps would you take to prevent the spread of the disease to other children in the home? 3 (a) What are the symptoms of botulism? (b) In what classes of food products is *Bacillus botulinus* most frequently found? (c) How would you confirm the diagnosis and if confirmed what further steps should be taken to prevent other cases of the disease? 4 (a) Name five bacteria which are common causes of acute intestinal infection (b) How would you isolate and identify the causative bacteria in one of these diseases? (c) On what would you base your final laboratory diagnosis? 5 (a) How is smallpox vaccine virus prepared? (b) Give the technique of vaccination and the after treatment. (c) Describe the evolution of the lesion with inert vaccine in a previously unvaccinated child with fully potent vaccine in a previously unvaccinated child with fully potent vaccine in a child successfully vaccinated about two years previously. 6 (a) Describe the immunologic principles underlying active and passive immunity (b) Give two examples of each as applied in the treatment of disease.

MATERIA MEDICA AND PHARMACOLOGY

Answer all questions. 1 Atropin (a) Give its source (b) Discuss its pharmacologic action (c) Give the signs of an overdose. 2 (a) Describe the effect of chloral on the central nervous system (b) Discuss the analgesic action of morphin. 3 Cocain (a) Give its source and physical properties (b) Discuss its action on the central nervous system. 4 Digitalis (a) Discuss its pharmacologic action on the heart muscle (b) Discuss its diuretic action. 5 (a) Discuss the action of antipyretic drugs (b) Give the source of salicylic acid three therapeutic preparations and dosage of each (c) Describe the effect of large doses of the salicylates. 6 (a) Name three therapeutic preparations of iron and give the dosage of each (b) Discuss the pharmacologic action of epinephrin and its therapeutic indications.

Part II

Part II of the examination was held in twenty-one of the medical schools mentioned above Sept 28 and 29 1922. This was also a written examination in the following subjects and with the relative values assigned: medicine, 75, surgery, 75, obstetrics and gynecology, 50 and public health, 25, making a total of 225 counts for this part.

A candidate taking Part II must earn at least 75 per cent of this total. The number of counts earned in any subject depends directly on the rating of the answered paper. Falling below 65 per cent in two subjects or below 50 in one subject constitutes a failure.

Twenty-seven candidates appeared for examination in Part II. Of these, twenty-one passed and six failed.

PASSED PART II

Names and Colleges	Year of Grad
Walter Jackson Freeman Univ. of Pennsylvania School of Med.	1919
Hugh L. Robinson Harvard Medical School	1919
Abram E. Burnett University of Nebraska College of Medicine	1919
Edward G. Waters Harvard Medical School	1919
Claude G. Drace Johns Hopkins University Medical Department	1919
Allen P. Foss University of Minnesota Medical School	1919
James C. Potter Johns Hopkins University Medical Department	1919
George Thomas Pack Yale University School of Medicine	1919
Ruth A. Miller Woman's Medical College of Pennsylvania	1919
Lee McCady Washington University School of Medicine	1919
William J. VanDenBerg Harvard Medical School	1919
David T. Smith Johns Hopkins University Medical Department	1919
Wayne J. Stater Harvard Medical School	1919
Henry L. Darnier Johns Hopkins University Medical Department	1919
David T. Ford University of Nebraska College of Medicine	1919
Frank G. Moore Johns Hopkins University Medical Department	1919
Paul B. Sheldon Washington University School of Medicine	1919
C. Chester Chianese Univ. of Pennsylvania School of Med.	1919
Horace E. Campbell University of Nebraska School of Medicine	1919
Oscar H. Stover University of Buffalo Medical Department	1919
Maria M. Wilcox Rush Medical College	1919

Names of Colleges	Failed
Rush Medical College	1919
Harvard Medical School	1919
University of Oregon Medical School	1919
University of Nebraska Medical School	1919
University of Zurich	1919
Johns Hopkins University Medical Department	1919

AVERAGES OBTAINED IN PART II*

Candidate's Number	Medicine Value 75	Surgery Value 75	Obstetrics and Gynecology, Value 50	Public Health Value 25	Final Averages
23	80.5	88	90	73.5	189.7
27	73	72	88	70.5	170.4
34	76.5	87	87	75	185
31	77.6	75	75	57.5	166
79	73	89	85	79	183.9
82	78	91	80	85.8	188.2
83	69	90	80	78.4	178.9
92	77	52	88	63.6	156.7
97	72	86	80	69.5	175.9
123	89.5	82	90	81.8	194
144	86	75	85	77	182.6
154	76	68	84	79.5	169.9
155	75	72	80	79.5	170.2
162	76.5	79	80	80.7	176.9
176	85	91	88	78	191.6
180	85	93	94	85.5	201.9
195	77	60	85	81.5	165.7
304	80.5	78	91	84.5	185.5
306	63.5	81	80	65	164.7
350	88	98	85	79.9	201.9
491	71	82	86	80.5	177.9
494	56.5	88	67	64	157.9
627	75	89	82	76.5	182.5
832	83.5	88	79	79.5	188
852	80	75	78	71	173.1
879	87.5	81	60	73.5	174.8
903	69	77	90	55	168.4

* The general average of the candidates is based on subject values as rated by the board. The averages in each subject are on a basis of 100. 1 000 is the total perfect mark as rated by the board for the entire examination. 225 is the maximum mark on this basis for Part II.

EXAMINATION, PART II

MEDICINE

Answer all seven questions. No credit will be allowed on questions not answered. Read the questions carefully and answer concisely what is asked. Quality will count more than quantity in marking the answers. An intelligent understanding of the disease more than a mere array of memorized facts. The time allowance is three hours. If you use for each question the time suggested in parenthesis you will still have thirty minutes for review and corrections. The time given with each question so indicates roughly the relative value of the question. It is unnecessary to repeat the questions when writing your answers for you should have a printed copy of the questions with your examination papers.

1 (Twenty minutes) (a) Describe a typical paroxysm of tertian malarial fever. (b) You are called to a patient who has a chill and find the rectal temperature 103 F. What other evidence without an examination of the blood would satisfy you that you are dealing with a case of malaria? (c) Describe your treatment of the case from this time on. 2 (Thirty minutes) A shopgirl 26 years of age ordinarily in good health but subject to 'head colds' had a slight sore throat and head cold come on four days before the time for her vacation. A slight cough followed, but without expectation. She had malaise, chilly sensations and slight fever but kept at work. At the beginning of her vacation exposure to wet and cold aggravated her trouble. She was obliged to go to bed temperature 101. She reports that the country doctor found rales in her chest and abnormal breathing. She was confined to bed one week. Slight fever is reported, considerable cough, expectoration at first yellowish green and thick, soon became whitish and then ceased. It was never tinged with blood. After a week of convalescence she returns to the city. She still coughs occasionally but has no expectation, she is easily tired and lacks energy. She consults you because not fit to work. Pulse 104, temperature 99.4, slight dulness at right apex. Any attempt to take a deep breath brings on a cough but no expectoration results. High pitched whistling rales are heard throughout the chest with inspiration and the whispered voice are greater at the dull area. The spoken and vocal fremitus is not increased slightly increased over this area but vocal fremitus is not increased and the respiratory murmur is not modified. No other rales are heard. Heart normal. Hemoglobin 75 per cent. Physical examination is other than negative. (a) Discuss the question as to tuberculosis in this case with the evidence at hand. (b) Direct treatment for patient at this visit on the evidence at hand. (c) How would you write prescriptions for any medicines ordered? (c) How would you handle the problem of determining later whether tuberculosis exists? 3 (Fifteen minutes) (a) Describe the symptoms and course of diabetic coma. (b) What laboratory tests give warning of the approach of such coma? (c) How does the age of the patient influence the prognosis in diabetes? 4 (Fifteen minutes) Describe (a) the early symptoms and diabetes? (b) the early physical signs of tabes dorsalis. 5 (Thirty minutes) A woman, 42 years of age, neurasthenic rather poorly nourished, moderately anemic (hemoglobin 75 per cent) has had recurrent attacks of colitis for the last three years and has been much worse during the last three weeks. For the last ten days she has taken one or two enemata daily to relieve the severe cramp-like pains in the abdomen. Followed by an enema she has passed considerable gas, the fecal matter has varied from hard scybala to loose material and generally there is much mucus. Before her colitis her bowels moved regularly without medicine since then there has been a marked tendency to constipation for which she has used various strong medicines. The bowels have been irregular, varying from constipated to loose movements and generally been irregular. Physical examination of the abdomen reveals nothing abnormal except tenderness on deep pressure over the colon and spastic contraction of the descending colon. (a) Outline a course of treatment for this patient for colitis. (b) Assume that later you have relieved the colitis and have chronic constipation to deal with—how would you proceed? (Write prescriptions for any medicines employed.) 6 (Twenty minutes) In the case of a woman 39 years of age the 6th month of pregnancy is distended to about the size it would be if she were seven months pregnant. Name the four conditions that you think most likely to have caused this enlargement and tell how you would differentiate to have caused this enlargement. 7 (Twenty minutes) (a) Give the usual period of incubation of measles, scarlet fever, diphtheria, chickenpox and whooping cough. (b) On what day of the disease is the appearance of the eruption to be expected in measles, scarlet fever and chickenpox?

SURGERY

Answer any five questions. 1 Give the differential diagnosis and outline the surgical management of (a) concussion (b) contusion and (c) acute compression of the brain. 2 Discuss (briefly) chronic mottled infection. 3 Give the diagnosis and treatment of bronchiectasis. 4 Give the symptoms of and outline the surgical management of a case of acute appendicitis (a) in a child of 10 years (b) in an adult male. 5 Discuss the differential diagnosis of hypernephroma, carcinoma of the kidney and stone in the kidney. 6 Discuss the diagnosis and treatment of sarcoma of the femur.

OBSTETRICS

1 What is the corpus luteum? Give its structure, origin and supposed functions. 2 Under what conditions is spontaneous birth impossible in a woman with normal pelvis and generative organs and a child of average size? Give reasons in each instance. 3 What is the special significance of venereal disease in obstetrics? 4 What is a tubal abortion? State how it differs from tubal rupture. Outline its clinical course and treatment. 5 What is pituitary extract? Give the indications and contraindications for its use.

GYNECOLOGY

1 Define acute and chronic endometritis. State how our conception of the latter has changed in recent years. 2 What are the anatomical prerequisites for the development of prolapse of the uterus? 3 Define the terms submucous, intramural and subserous myoma of the uterus. What symptoms and clinical findings should indicate operative removal in the last named variety? 4 Give differential diagnosis between a large ovarian cystoma and hydramnios at the eighth month of pregnancy. 5 Discuss the symptoms, diagnosis and treatment of cystitis due to the colon bacillus.

PUBLIC HEALTH

HYGIENE

1 Name insect borne diseases and discuss the transmission of one of them. 2 Give the object, advantages and disadvantages of the pasteurization of milk. 3 Discuss the chief factors in anemia in the Gulf states and discuss the methods of dealing with them. 4 Discuss the etiology and prevention of lead poisoning. 5 Give the differential diagnosis between smallpox and other eruptive diseases with which it may be confused.

MEDICAL JURISPRUDENCE

1 What are the requirements for medical practice in your home state? 2 What is the legal procedure for commitment of an insane person in your state? 3 What aid does rigor mortis give you in determining the time elapsed since death? 4 Give definition of 'medical jurisprudence' and indicate four of its chief applications. 5 What are the signs of death by carbon monoxide poisoning?

Minnesota October Examination

Dr Thomas S. McDavitt, secretary, Minnesota State Board of Medical Examiners, reports the oral, written and practical examination held at Minneapolis, Oct. 3-5, 1922. The examination covered 15 subjects and included 80 questions. An average of 75 per cent was required to pass. Fourteen candidates were examined, all of whom passed. Thirty-three candidates were licensed by reciprocity. Two candidates were licensed by endorsement of credentials. The following colleges were represented:

College	PASSED	Year Grad	Per Cent
College of Medical Evangelists	(1922)	90	1
Northwestern University	(1922)*	90.4	91.2
Rush Medical College	(1922)	94	
Tufts College Medical School	(1919)	82	7
Boston University	(1922)	93	
Harvard University	(1919)	87	1
University of Minnesota	(1918) 90	(1922)†	76.2 88.2
Washington University	(1922)	86	2
New York Homeopathic Med. Coll. and Flower Hosp.	(1920)	92	2
Syracuse University	(1920)	89	7
University of Cincinnati	(1920)	87	4

College	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
Stanford University	(1921)	California	
George Washington University	(1904)	Dist. Colum.	
Hahnemann Med. Coll. and Hosp. Chicago	(1910)	(1920)	Illinois
Northwestern University	(1917)	(1921)	Illinois
Rush Medical College	(1916)	(1921) 2	Illinois
Indiana University	(1919)	(1922)	Wisconsin
State University of Iowa College of Medicine	(1891) (1914) (1918) (1919) (1920) (1921) 2	(1921) 2	Iowa
Johns Hopkins Univ.	(1918) (1920)	(1921)	California Ohio
University of Michigan Medical School	(1917)	(1922)	Michigan
St. Louis University School of Medicine	(1918)	(1921)	Missouri
Washington University	(1921) 2	(1922)	Missouri
Creighton University	(1920)	(1921)	Nebraska
University of Cincinnati	(1907)	(1921)	Ohio
Hahnemann Med. Coll. and Hosp. of Philadelphia	(1911)	(1921)	Iowa
University of Pennsylvania	(1921)	(1921)	New Jersey
University of Pittsburgh	(1922)	(1922)	Pennsylvania
Marquette University	(1922)	(1922)	Wisconsin

ENDORSEMENT OF CREDENTIALS
College
Rush Medical College
Woman's Medical College of Pennsylvania
(1917) N. B. M. Ex.
(1921) N. B. M. Ex.

* These candidates have finished the medical course and will obtain the M.D. degree after they have completed a year's internship in a hospital.

† These candidates have finished the medical course and received their M.B. degrees and will obtain the M.D. degree after they have completed a year's internship in a hospital.

Medical Economics

THE PHYSICIAN'S INCOME TAX

Every person whose gross income was \$5,000 or more during 1922 must file an income tax return, no matter what his net income may have been. A person whose gross income was less than \$5,000 must file a return if, being married, his net income was \$2,000 or more, or, being unmarried, his net income was \$1,000 or more. Returns must be filed on or before March 15, 1923. A person who is required to make a return and who has not received the proper blank for such return, should make application for such a blank to the collector of internal revenue in the district in which he resides. If his net income was \$5,000 or less, form 1040 A should be requested, if more than \$5,000 then form 1040. The fact that a collector of internal revenue has not on his own initiative supplied the proper blank does not excuse tardiness or failure in making such a return. Full instructions as to what constitutes gross income and what net income, and as to allowable deductions applicable to taxpayers generally, accompany the blank form supplied by the collector. There are printed here, therefore, only such instructions as have a peculiar bearing on the physician.

I GROSS INCOME WHAT IS IT?

A physician's gross income is the total money received for professional work during the year regardless of when the services were rendered for which the money was paid plus such income as he may have received from investments, speculation and other sources.

II PROFESSIONAL EXPENSES WHAT MAY BE DEDUCTED?

Deductible professional expenses are all expenses necessary for carrying on practice. This includes office rent and maintenance, services, supplies and certain incidentals. With reference to expenses other than professional expenses, the rules applicable to physicians are the same as those applying to all other persons, full information concerning them is printed on the blank supplied for the making of returns.

Office Rent and Maintenance.—Office rent and maintenance are deductible provided the office is not in a building owned by the physician. If a physician maintains an office in his own house or in an office building which he owns, he cannot charge himself rent and deduct the amount. If he rents an office for business purposes alone, in a building outside his residence then the entire rental may be deducted. If his office is located in a rented house or apartment in which he has his residence also, then a part of the rental in proportion to the amount of space used for business purposes may be deducted as office rent. The same principle applies to expenditures for heating, lighting and maintenance. If a physician, having his office at his residence, has a servant part of whose time is devoted to office work, then part of her wages may be deducted. Salaries of office attendants, assistants, stenographers and the like are deductible. The fact that a physician occasionally sees a patient at his house or apartment does not justify him in making a deduction, even though the house or apartment may not be owned by him. In order to be entitled to deduct expenses for office maintenance he must actually have an office, with regular office hours in his house.

Expendable and Nonexpendable Property.—A distinction is made between expenditures for expendable and for nonexpendable property. Expendable property is property that is ordinarily consumed in the using such as dressings, clinical thermometers, drugs and chemicals. Nonexpendable property may ultimately be used up, deteriorate or become obsolete but it is not in the ordinary sense of the word consumed, rather it "wears out." Money spent for expendable property for professional use may be charged as an expense. Money spent for nonexpendable property is looked on as an investment, and cannot be deducted. The loss incident to the ordinary use of nonexpendable property, through wear and tear or through normal deterioration, however if such property is maintained for professional use, may be deducted as depreciation.

No hard and fast rule can be laid down as to the amount that may be deducted on account of depreciation, everything depends on the nature and extent of the property and on the use to which it is put. Five per cent per annum has been suggested as a fair figure for depreciation on an ordinary medical library. Depreciation on an automobile would obviously be much greater. So, too, with respect to laboratory apparatus. The physician must in good faith use his best judgment, and make such allowance for depreciation as the facts justify. Depreciation should be computed on the basis of the amount paid for the article or, if purchased before March 1, 1913, when the first income tax went into effect, then on its estimated value at that time. Elaborating somewhat on the foregoing statement, the following paragraphs are submitted.

Drugs, Dressings, Instruments, Etc.—The cost of drugs, dressings and other materials used in the treatment of patients is an expense, and may be deducted. The cost of instruments, appliances and equipment which constitute a part of the physician's professional outfit and are to be used over a considerable period of time is an investment and cannot be deducted. Under the latter heading, nondeductible expenses, would come money paid for office furniture and equipment, instruments and apparatus, but on such articles depreciation may be charged.

Transportation.—The cost of maintaining an automobile or a team for professional use is an expense and may be deducted. The original cost of the automobile or horse and vehicle however is an investment and may not be deducted although depreciation may be charged against it. The cost of maintaining an automobile includes gasoline, oil, tires, insurance, repairs, garage rental (when the garage is not owned by the physician), chauffeur's wages, etc. Allowable depreciation must be a reasonable depreciation based on the actual diminution in the value of the car resulting from obsolescence and the use to which it is been subjected. If it is computed on the basis of an average that average must cover the entire estimated life of the car, not merely the life of the car during the time when it is in the possession of the physician. If the automobile is used for professional and for personal purposes or if it is used by the physician or his family for recreation, then the proportion of expense of operating the car for business purposes alone may be deducted. A physician doing an exclusive office practice who uses his car merely to go to and from his office, cannot deduct depreciation or operating expense since he is said to be using the car for his personal convenience and not as a means of gaining a livelihood. What has been said above with respect to automobiles applies with equal force to horses and vehicles and the equipment incident to their use.

Books and Journals.—Medical journals are regarded as expendable supplies, and money paid for them is looked on as an expense and is deductible. Medical books are looked on as nonexpendable, money paid for them is regarded as an investment, and is not deductible. Depreciation may be charged.

Medical Society Dues.—Dues paid to medical societies of a strictly professional nature are looked on as a legitimate expense, and may be deducted. Dues for social organizations however even though their membership is limited to medical men is looked on as a personal expense and is not deductible.

Traveling Expenses.—The interpretation of the income tax law published last year (*THE JOURNAL*, Feb. 4, 1922, p. 573) that a physician's traveling expenses incident to attendance at meetings of medical societies were deductible was denied by a ruling of the Commissioner of Internal Revenue, June 26, 1922, to which attention has heretofore been called (*THE JOURNAL*, Dec. 2, 1922, p. 1937). Briefly the commissioner's ruling denies that such expenses are ordinary and necessary expenses arising out of the practice of medicine and denies the right of a physician to take credit for such expenses in computing the income tax he is to pay. On behalf of the American Medical Association urgent representations have been made claiming that this ruling is not in harmony with the statute and urging that it be rescinded. The matter is now pending before the Commissioner of Internal Revenue and a decision is expected at an early date. It will be

reported in *THE JOURNAL* immediately on its receipt. It is advised that in the meantime, and up to a reasonable time before the date when returns must be filed, March 15, those physicians who desire to take credit for traveling expenses incident to attendance at meetings of medical societies, postpone the filing of returns. Physicians who are not confronted with the problem of traveling expenses should file their returns as soon as possible.

Cost of Postgraduate Study—The Commissioner of Internal Revenue holds that money expended for postgraduate courses is an investment, not an expense, and is not deductible.

Laboratory Expenses—Physicians maintaining laboratories may deduct rental and maintenance expenses. They may deduct, also, salaries paid to laboratory assistants, and the cost of chemicals, breakable apparatus, roentgen tubes and plates. Expenditures for apparatus, equipment and furniture, of a permanent nature, are looked on as an investment, and cannot be deducted, but a reasonable deduction may be made on account of depreciation each year.

Miscellaneous—Oculists who furnish glasses for patients may charge as a part of their incomes the money received for such glasses, in which event they may deduct as one of the expenses of their practice the amount paid by them for the glasses they supply. Entries on the physician's account books shown in such cases show the charge for professional services separate and apart from the charge for glasses.

Uninsured and unrecoverable loss by fire, theft or other means, of strictly professional equipment, provided satisfactory evidence of the loss can be produced, and premiums for insurance against fire or other losses, of strictly professional equipment, are deductible.

Miscellany

THE ADVISORY COMMITTEE ON ANTHRAX

The Advisory Committee on Anthrax, appointed by the International Labor Conference, met in London, Dec. 5, 1922. The committee was composed of Prof. Oliver of Australia, Dr. Glibert, Belgium, M. Boulin, France, Dr. Frev, Germany, Sir William Middlebrook, chairman of the Departmental Committee on Anthrax, Great Britain, Dr. Loriga, Italy, Colonel Hutchinson, India, Dr. Konai, Japan, Dr. Dixon, South Africa, Professor Rocca, Spain, Mr. Ribbing, Sweden, and Dr. Dorset, observer for the United States.

The committee was charged with inquiring into and reporting on the prevention of anthrax contracted through hides, skins and other animal products, and the disinfection of wool and hair suspected of being infected with anthrax. It was agreed that the hair used in the brush-making and upholstering industries should be disinfected before using, and that wool and hair used in the textile industry should be disinfected before being handled industrially except (1) when the country of origin is included in the list of countries where the danger is slight, (2) when the material to be imported has already been disinfected by a recognized process, (3) when wools and hair have to be sorted before washing unless these products are not included in the list of harmless products, and (4) in such other cases as may be determined by the committee. The processes of disinfection must be approved by the International Labor Conference and conform with the opinion of the Health Committee of the League of Nations. A list of countries where the danger is slight will be brought up to date annually by the Advisory Committee on Industrial Hygiene of the International Labor Office, which committee will be guided by these criteria: (1) for importing countries, raw materials, the country of origin of which is known, and which have not caused a case of anthrax in the importing countries, or the absence of anthrax spores after bacteriologic examination, (2) for countries of origin, the absence of anthrax among animals, or the application of strict measures for stamping out any outbreaks at the source.

The committee was of the opinion that the best precaution against anthrax among flocks is the compulsory notification

and official verification of cases of anthrax, the isolation of animals suffering from or suspected of suffering from anthrax, the destruction of the entire carcasses of animals dead or suspected to have died from anthrax, and disinfection of the immediate surroundings where the animal died as well as the premises where it was kept, and preventive inoculation against anthrax. It was decided that, in order to reach a practical conclusion of international character concerning disinfection, the International Labor Office should study this question in conjunction with the International Institute of Agriculture at Rome.

This resolution was adopted.

The committee is of the opinion that in most countries the principal danger of industrial anthrax arises in the manipulation of hides and skins and recognizes the impossibility of securing at the present time complete disinfection to protect against this danger. The committee therefore recommends that regulations be laid down in the different countries having for their object the protection of the workers and the soil against infection by anthrax from hides and skins. The committee further suggests that the International Labor Office in conjunction with the Health Committee of the League of Nations should organize international research and invite nations and organizations chiefly interested to undertake such research in their respective countries. The committee considers that in view of the fact that all countries using infected materials will be benefited by the discovery of a satisfactory process of disinfection, it is desirable that the governing body should take into consideration the possibility of finding grants in aid of research undertaken for that purpose.

The final report of the committee was adopted unanimously with the exception of one abstention, and two votes withheld on a point concerning wool.

THE BOY WHO WONDERS WHY

Sir: In after centuries will not this generation be known as "The Silly Age"? Or have they all been that way?

M. Coue gave four performances at Orchestra Hall, seating about 3,700 persons, with a top price of \$2. On the one side of the footlights, 3,600 persons there to see a new show, something different to please their appetites sated with foxtrot dancing, cats and canaries, and Ziegfelds. On the other side of the footlights, the man who earnestly tries to tell them all that he is no miracle worker, behind him more than 100 cripples. Whether he cures some or not, I have a mental picture of a mother who sat in the front row on the stage, directly behind the man from Nancy, on her knees an 8-year-old boy whose eyes have never seen. The boy sat with bowed head, patiently, now and then twisting his slender fingers, an eager smile on his lips. He had been told he would be made to see.

There come storms of applause from the other side of the footlights.

"What is it?" the blind boy asks eagerly.

"Some one has been cured," he is told.

Outside, half an hour later, the boy patiently asks why M. Coue did not make him see with his eyes that have never seen.

On Saturday M. Coue sails for France, for Nancy. He will probably build himself a new chateau. Fifteen thousand persons at four Coue performances had a new thrill. The 8-year-old blind boy still sits patiently twisting long fingers and wondering why.

Yes, this will be the silly age.

XALOID, in "Hit or Miss," *Chicago Daily News*

Mental Attitude as a Cause of Constipation—The mental attitude is no small factor in the cause of constipation. The laity do not understand that the colon is made to be a garbage can, and that its walls and mucous surfaces are prepared by nature to handle the fecal matter without harm to themselves or the body. They think only of the "harm" and "injury" coming to them from the retention of such matter as the feces. Naturally they look upon the function of the tract from the mouth to the anus as one of absorption, and when constipated they conjure up in their minds wonderful mental pictures of the condition they are getting into by lack of bowel movement.—R. M. Clarke, *California State J. Med.* 21:22 (Jan.) 1923.

Book Notices

THE HISTORY OF HUMAN MARRIAGE. By Edward Westermarck Ph D Hon LL D. Martin White Professor of Sociology in the University of London. In three volumes. Fifth edition. Cloth. Introductory price \$9.50. New York: The Allerton Book Company, 1922.

In 1891 appeared the first edition of this anthropologic work, which was destined to become one of the classics of its subject. The small volume of that period—200 pages—with an introduction by the renowned Alfred R. Wallace, has now grown to a three volume work with more than 1800 pages. There is a bibliography over 125 pages in length, and an elaborate index. The author's approach to his subject is biologic. His consideration of secondary sexual character, of primitive means of attraction and of the effects of environment on life bears the stamp of this point of view. The effects of economic conditions on marriage and the social aspects of the subject, which chiefly concern the sociologist, are not, however, neglected. It is the broad presentation of a vast amount of data which marks this book as a scientific work. The author draws no morals from his inquiry into the customs of primitive peoples and of modern savages. He places his facts before the reader, and he interprets the facts in the light of evolution and the development of the various races. Professor Westermarck who holds the Martin White Professorship in Sociology in the University of London, had access, in the preparation of this edition, to the vast material available in the reading room of the British Museum. The books are not, however, mere storehouses of data and description. The author's style is pleasant, and he has an instinct for passages in the authorities whom he cites that convey actual pictures of life in the communities described. The aim of the work has been completeness. Beginning with the method of the study, the author considers the hypothesis of promiscuity, and celibacy, sexual attraction, endogamy, exogamy, marriage by barter, marriage rites, monogamy, polygyny, polygamy, polyandry, group marriage and the duration and dissolution of marriage. The subject is fundamental to an understanding of the history and the most vital problems of the human race. Professor Westermarck's earlier editions have been translated into almost every language in the world. It is gratifying to have available a convenient, new fifth edition in English.

LEHRBUCH DER GRENZGEBIETE DER MEDIZIN UND ZAHNHEILKUNDE FÜR STUDIERENDE ZAHNÄRZTE UND ÄRZTE. Bearbeitet und Herausgegeben von Dr. Julius Misch. Second edition. Volumes 1 and 2. Paper. Price 1200 marks. Leipzig: F. C. W. Vogel, 1922.

The close relationship between affections of the mouth, especially of the teeth and gums, and those of the rest of the body has been known for a long time. Only too frequently are the teeth made to suffer for woes attributed to them when the cause lies elsewhere. A clear understanding of what this relationship consists, what the limitations of dental practice are, and under what conditions dental aid is required would be a great boon to mankind. What is required by the physician is a clear-cut description of oral complications he may encounter in practice, and by the dentist, when to call medical aid. The authors have tried to meet this requirement but unfortunately have put this information in two bulky volumes. One cannot criticize unfavorably the results of their labor. The whole domain of medicine is covered: internal medicine, pediatrics, rhinology, otology, laryngology, obstetrics and gynecology, dermatology, syphilis and occupational diseases. The illustrations, most of which are borrowed from the most authoritative sources, are reproductions of roentgenograms, colored histologic drawings and the like, and are excellent. As a textbook for the dental student, it would be admirable were it not for the innumerable excursions into unnecessary fields, such as the technic of auscultation, percussion, rhinoscopy, otoscopy, bronchoscopy and intubation. As a textbook for the physician, it would be far more valuable if

be overemphasized. A whole chapter is devoted to syphilis of the mouth. It is interesting to note that in the section on hysteria the authors point out the necessity of a careful diagnosis before embarking on dental work, in order to avoid any legal complications that may arise for unnecessary work when the symptoms really of psychic origin, are attributed to an organic condition in the mouth. Dentists who still have a fear of plying their trade on pregnant women with teeth defects can take heart and proceed with their work after reading that nowhere is it more necessary to take care of the teeth than in pregnancy and thereby avoid distressing after-effects. In spite of its bulk, this work is an excellent reference book. There is an exhaustive bibliography and a complete index.

LAWSON TAIT: HIS LIFE AND WORK. A Contribution to the History of Abdominal Surgery and Gynecology. By W. J. Stewart McKay. M.B. M.Ch. B.Sc. Cloth. Price \$7.50 net. Pp. 579 with illustrations. New York: William Wood & Co., 1922.

This can scarcely be regarded as a biography, for of its 575 solid pages only twenty-five or thirty contain material that can be designated biographic. In the opening paragraph it is said that Tait was the son of Archibald Campbell Tait, yet in three different places in the body of the book the old story that Tait was the natural son of Sir James Y. Simpson is repeated and in one place photographs of Tait and Simpson are reproduced on opposite pages evidently to show the similarity of features and of physical characteristics of the two men. Casually the reader is told that "Tait is now [1897] living in Wales" but no reason is given for his leaving Birmingham. But while the book may not be an ideal biography, it is definitely what is claimed by its subtitle, "A Contribution to the History of Abdominal Surgery and Gynecology." The life and work of few medical men has left a greater impress on gynecology and surgery than did that of Lawson Tait. His personality, however, especially his aggressiveness and his intolerance in discussion, embittered many of his conferees against him and prevented that recognition which he otherwise would have received.

Tait was fortunate in that he commenced his professional work at the time when anesthesia had made surgical procedures painless when the work of Pasteur and Lister had given the clue to safety in radical surgery, and when hospital gangrene and "laudable pus" were becoming things of the past. It was the ideal opportunity for the ambitious surgeon. It was during the quarter century from 1870-1895—approximately the period of Tait's active work in Birmingham—that abdominal and gynecologic surgery had its first great development, and in which were worked out the fundamental principles and procedures on which modern surgery has developed. This book is a record of that development and though Tait's connection with it is not given full credit is given to others. Natural history and operative procedures on the ovaries and uterus, a monious discussion relating thereto, not forgetting the treatment of the pedicle like a promiscuous pregnancy, hysterectomy for fibromyoma, myomectomy of the uterus, pelvic appurpation and myomectomy, the subjects of a few of the chapters, are considered.

Of course Lawson Tait was the son of Archibald Campbell Tait, yet in three different places in the body of the book the old story that Tait was the natural son of Sir James Y. Simpson is repeated and in one place photographs of Tait and Simpson are reproduced on opposite pages evidently to show the similarity of features and of physical characteristics of the two men. Casually the reader is told that "Tait is now [1897] living in Wales" but no reason is given for his leaving Birmingham. But while the book may not be an ideal biography, it is definitely what is claimed by its subtitle, "A Contribution to the History of Abdominal Surgery and Gynecology." The life and work of few medical men has left a greater impress on gynecology and surgery than did that of Lawson Tait. His personality, however, especially his aggressiveness and his intolerance in discussion, embittered many of his conferees against him and prevented that recognition which he otherwise would have received.

of cholecystostomy" Other subjects are treated in similar manner, and the author has tried to be fair and give credit where due

This book will be read with profit not only by those interested in Lawson Tait, but also by all who have any interest whatever in the history of the development of abdominal surgery

A MANUAL OF PHARMACOLOGY AND ITS APPLICATIONS TO THERAPEUTICS AND TOXICOLOGY By Torald Sollmann M.D. Professor of Pharmacology and Materia Medica in the School of Medicine of Western Reserve University. Second edition. Cloth. Price \$7 net. Pp 1066. Philadelphia W. B. Saunders Company 1922

The second edition of Dr Sollmann's work contains all the admirable features which made the first contribution preeminent. But the present work also contains the author's estimates of the advanced therapeutic and pharmacologic data up to January, 1922. There have been incorporated important additional changes in all parts of the text, also introduced are excellent discussions of new topics, such as the "war-gases," the new antiseptics (hypochlorite derivatives, acridine dyes, mercury compounds, protargins) cuprein derivatives, and paraffin for films. The author states that these additions have enriched the bibliography alone by more than twelve hundred titles. Throughout the text American names as well as the newer nonproprietary designations are used, this is a particularly valuable feature to teachers of materia medica. The subject matter is of large scope, the broad conceptions, generalizations and certain detailed conclusions—all of great and practical pharmacologic importance—are printed in larger sized type, a large mass of minute detail—data for consultation—appears in smaller type. Thus may the manual serve for both study and reference. It is reliable and a distinct credit to American medicine as well as to pharmacology. Not only is it a work for the student and laboratory worker, but it is equally valuable for the practitioner. Progressive physicians realize that the estimate of a drug cannot be based on uncontrolled clinical observations or on uncritical statements handed down from book to book. Physicians abreast the times demand that all the scientific evidence concerning drugs—chemical, pharmacologic and clinical—shall have been considered. For their purpose, there could be no better addition to the library than Sollmann's Manual of Pharmacology.

UNTERSUCHUNGEN ÜBER DIE EIGENREFLEXE (SEHNENREFLEXE) MENSCHLICHER MUSKELN Von Paul Hoffmann. Privatdozent für Physiologie in Würzburg. Paper. Price \$120. Pp 106 with 38 illustrations. Berlin Julius Springer 1922

This is a scientific discussion of tendon reflexes by a physiologist. He objects to the term tendon reflexes and prefers to call them Eigenreflexe (proper muscle reflexes, idiomuscular reflexes). The tendon plays no important part, the reflex being produced by a sudden pull in the long axis of the muscle, and it is immaterial whether this is produced by tapping the tendon or moving the joint suddenly. The author deplores the use of the term "reflex" for such complicated phenomena as Pawlow's "conditional reflexes" in which association is involved. He shows that recent physiologic investigations have removed the objection to the true spinal reflex nature of the so-called tendon reflexes raised on the ground that the reaction time is too short. Apparatus and recording methods for the fine study of reflexes are described in detail.

DIE EPIDEMISCHE ENCEPHALITIS Von Professor Dr. Med. Felix Stern. Oberarzt der Universitätsklinik für Psychische und Nervenkrankheiten. Göttingen. Paper. Price \$2.80. Pp 228 with 12 illustrations. Berlin Julius Springer 1922

This is No. 30 of the monograph series edited by Foerster and Wilmanns. It is a carefully worked out monograph discussing all features of the disease based on the extensive clinical and pathologic work of the author and a critical review of the entire literature. American English and French observations are considered as fully and impartially as those by German authors. It is by far the most comprehensive book on this disease published so far and it enters more deeply into pathogenic problems than any other. While calling attention to all of the manifold symptoms and lesions

encountered, the main effort is centered on presenting a picture of the disease as a whole and to establish scientifically its nosologic entity. The discussion of its relationship to influenza is very fascinating and convincing, though no positive conclusion is reached except that a close relationship exists. It is thought that the filtrable encephalitic virus exists in a harmless form in the nasal mucosa of a great many persons and that it requires activation by the influenza virus and possibly by others of unknown nature. The possible relation to ordinary herpes is discussed. Much attention is given to the chronic and recurring forms, especially the parkinsonian form, and it is considered possible that toxins from the liver, kidneys or ductless glands may participate in their pathogenesis. So far very little material from old cases has been available for study, and it is not considered settled that we are dealing with the action of persistent encephalitic virus, as is the case with spirochetes in parietic dementia.

FUNCTIONAL NERVOUS DISORDERS. THEIR CLASSIFICATION AND TREATMENT By Donald E. Core M.D. M.R.C.P. Honorary Assistant Physician the Manchester Royal Infirmary. Cloth. Price \$6. Pp 371 with 21 illustrations. New York William Wood & Co., 1922

This is an extremely difficult book to read because the author has developed a language of his own in which he uses many words such as "psychic dissociation" and "atmosphere" in a quite special sense, which is not always obvious. This very decidedly interferes with the purpose of the author in writing the book, which was the introduction of order into the chaotic vagueness which at present stamps the classification and conception of functional nervous disorders. Dr. Core, on premises of his own, which contain much food for thought, divides these disorders into regressive and progressive types. The former contains only hysteria, which is divided into primary, secondary and tertiary varieties dependent on "the atmosphere" in which the condition develops. The progressive disorders present symptoms referable, essentially, to disturbances in the sympathetic system. They are subdivided into "instinct-distortion neuroses or dysthymias," and "mnemoneuroses." The latter are usually end-stages of the dysthymias, and are fundamentally dependent on memory. There is also much discussion of the relation between functional disorders and structural disease. Great stress is laid on the causation of the latter by the former, and yet the reasoning is difficult to follow and ignores some facts of histopathology. The involved phraseology is distinctly unfortunate, because close study reveals original thought, and suggests constructive possibilities. There is much that is worth the labor of reading for the specialist, but the book cannot be recommended to the general reader.

THE PROCESS OF DIAGNOSIS INCLUDING THE METHOD OF HISTORY TAKING AND PHYSICAL EXAMINATION OF SURGICAL CASES By E. Stanley Ryerson M.D. C.M. F.A.C.S., Associate in Surgery and Secretary of the Faculty of Medicine University of Toronto. Cloth. Price \$1. Pp 109. Toronto University of Toronto Press 1922

This little book would be especially suitable reading for the intern entering on his hospital service. Such reading could not fail to improve the quality of the examinations of patients and of the histories written. The difficulty of eliciting facts by interrogation of the patient is well brought out by the author. He quotes Mlle. Borst, who found that "the degree of fidelity of the hesitating witness may be put down as 56 per cent of a confident witness, 86 per cent of a sworn witness 92 per cent" but considers these results too favorable as those examined knew they were going to be tested and endeavored to fix the facts in their memory. A similar test applied to fifty-four students, who had no warning showed an average fidelity of 27 per cent. "The practice by many physicians of giving the history 100 per cent value and making a diagnosis on this alone and prescribing treatment in accordance with this diagnosis is scarcely justifiable if the facts elicited really have only 27 per cent truth in them." The subject is taken up chiefly from the standpoint of the surgeon but the author does not intend to present a systematic treatise on surgical diagnosis. He aims merely to assist students in the process of diagnosis by suggesting the exercise of logic and the application of system.

Medicolegal

Medical Services for which Employer Is Not Liable

(*Gaines v. Imestone Co. v. Robertson* (Ga.) 113 S. E. R. 98)

The Court of Appeals of Georgia, Division No. 2, in reversing a judgment obtained by plaintiff Robertson against the defendant company, gives no further information about the case than is contained in the syllabus by the court that, in a suit in quantum meruit (a suit to recover the reasonable value of services), when it does not appear that the services rendered by the plaintiff were rendered to the defendant, or for the defendant's benefit, or, if rendered to a third person, were rendered in the performance of a duty which the defendant owed to such third person, no promise by the defendant to pay for the services will be implied.

Medical services rendered to an injured employee, such as the performance of an operation for the purpose of relieving him of the effects of the injury, and in giving him medical attention generally, are not services for the benefit of the employer when they are not rendered until after the injured person has reached his home and been cared for by another physician, and are not rendered in the performance of any duty which the employer may at the time of the injury owe to the employee in the nature of emergency treatment, by way of a humanitarian or legal duty to minister immediately to and care for the injured employee.

When, at the time of injury to an employee, and after the employee had been informed that a certain physician had been summoned to treat his injury, the employee requested a fellow servant to summon the plaintiff who was his own family physician, and the plaintiff was accordingly summoned, and, in company with the other physician, treated the employee's injuries, and continued in attendance on him, when, several days afterward, an authorized agent of the employer stated to the physician who had first been summoned that he desired that everything be done for the benefit of the injured employee, including the procurement of other physicians if necessary, and when this physician did cooperate with the plaintiff, the inference was not authorized that there was an express contractual relation between the plaintiff and the employer, obligating the employer to pay the plaintiff for any medical services rendered to the employee.

The verdict rendered for the plaintiff, being without evidence to support it, should have been set aside on the defendant's motion for a new trial.

Invalid Ordinance and Revocation of License

(*Moorehouse v. Hammond* (Utah) 209 Pac. R. 883)

The Supreme Court of Utah says that a complaint in writing was filed in the office of the defendant, as director of registration, in which it was charged that plaintiff Moorehouse had been guilty of unprofessional conduct in that he had wilfully failed to report to the health officer in writing a case of infectious disease which he had treated on a certain date, and that, having been charged with this offense before a justice of the peace, he had pleaded guilty and been adjudged to pay a fine of \$25. Thereafter, a hearing was had before the defendant and a committee of physicians, as provided by statute and the committee, after hearing the evidence, reported that it found the accused guilty of unprofessional conduct as charged and recommended that his license to practice medicine and surgery be revoked, after which the defendant entered an order of revocation.

The plaintiff was charged with violating a town ordinance that required a report in writing, while the state statute merely requires a physician to report "the existence of any contagious or infectious diseases to the local board of health." The ordinance required more from the physician than did the statute. While the cities and towns including boards of health in Utah, are given ample power to pass and enforce ordinances to promulgate and enforce rules and regulations respecting the public health and to require certain things to be done in case of contagious and infectious diseases, when, as here, the statute specifically defines what act

or acts of commission or omission on the part of a physician shall constitute unprofessional conduct authorizing the revocation of his license to practice medicine an ordinance, in the absence of express statutory authority cannot impose greater or different duties in that regard than the statute imposes.

However, if it was held that the ordinance in question could impose the duty of reporting contagious and infectious diseases in writing yet, in view of the fact that it did not denounce the omission or failure to report as unlawful nor impose any penalty or punishment for a failure to make a report, the ordinance was clearly unenforceable, and the imposition of the fine by the justice was beyond his power and constituted manifest usurpation.

Besides, a member of the board of trustees of the town testified that he was the authorized quarantine officer of the town, that he was present at the house of the afflicted person, that the plaintiff informed him, as quarantine officer and trustee that the patient was afflicted with smallpox, and that immediately on receiving this information he put up a sign quarantining the house in which the patient was confined. The provisions of the statute were thus substantially complied with and that is all that the law requires.

In concluding its opinion the court desires to add that it is very reluctant to interfere with the orders of the boards of health in carrying into effect the rules, regulations and ordinances relating to the prevention of disease and the protection of the public health. In enforcing these rules regulations and ordinances the boards of health are exercising the highest functions of government and they should not be interfered with unless it is clear that they have exceeded the bounds of their authority. When, however, as here the rights of a citizen have been invaded and he has been condemned without authority of law and has had his license to practice his profession revoked the court has no alternative but to correct the wrong by annulling and setting aside the order by which his privileges have been denied him.

Physician Not Liable for Death of Child from Eating Tablets Left for Adult

(*Walker Chase* (Ia.) 190 V. II. R. 91)

The Supreme Court of Iowa in reversing a judgment for \$3,500 damages that was rendered against the defendant a physician, for the death of a child, alleged to have been caused by the physician's negligence, says that the case was unique in that it had no precedent as an authority, that the court had examined the authorities cited in the brief for the plaintiff and found none that could fairly be called an authoritative precedent in support of a recovery in this action which was brought by the father of the child as administrator of its estate. The evidence disclosed that the defendant was called to the home of a patient 22 years of age, who was being attended by the mother of the child. He left in a china cup on the table twelve or fifteen pink tablets for the patient each tablet containing one sixtieth grain of strychnin. On the following morning the child who was 17 months old was discovered in a chair at the table after she had eaten all of the tablets less four. She went into convulsions and died within an hour. The plaintiff sought to make a point of the fact that the tablets were pink and therefore attractive to a child and he argued that in putting the pink tablets into the china cup and leaving the cup on the table within the possible reach of the child the defendant exposed her to a danger which he ought to have foreseen and against which he ought to have guarded.

If instead of setting the cup on the table the defendant had placed it in the hand of the child's mother or of the other attendant this circumstance would have wholly undermined the argument on the proposition that it was negligent for the defendant to put the tablets in a cup and to leave the cup on the table and that his responsibility for this act continued as long as the tablets remained where he left them. In legal effect the cup with its contents was put into the custody and control of the child's mother as effectively as by any other conceivable method. It was in her hand and in her care. In order to hold the defendant liable for the death of the child the court would have to find that the defendant was negligent in not placing the cup in the hand of the mother or of the attendant.

one tablet every four hours, she must necessarily handle the cup and assume control of it. It was not wrong for the trial court peremptorily to instruct the jury that the act of the defendant amounted to a delivery of the tablets to the child's mother. The care, custody and control of the cup with its contents passed that evening to her, and from that time forward, she, and not the defendant, was responsible for whatever method of care, custody and control she chose to adopt.

Nor was the defendant negligent in that he failed to warn the mother that the tablets, if taken by her child, would be injurious and dangerous. A formal warning to the mother would have been a mere formality, which would have added nothing to the knowledge she already had that it would be extremely dangerous for a child of the age of the one in question to swallow ten or a dozen doses of medicine. Though the petition charged a failure to label the tablets, it was not contended that the failure to do it was a violation of the statute. It was urged as a circumstance on the question of negligence. But an instruction was technically erroneous which implied that the burden of proof was on the defendant to show that the mother knew that the tablets contained drugs that were dangerous to the health and life of her child. On this question, the burden was on the plaintiff, not on the defendant. The conclusion of the supreme court is that the record disclosed no evidence of negligence on the part of the defendant, and that his motion for a directed verdict ought to have been sustained.

Duty as to Reporting Result of Physical Examination

(*Kelman v Union Ry Co (N Y) 195 N Y Supp 313*)

The Supreme Court of New York, Appellate Division, First Department, reverses an order that was obtained by the defendant requiring the plaintiff, who was seeking to recover damages for personal injuries, to submit to a physical examination by two physicians named, which in its final form was in accord with an opinion that the physicians should file their report with the referee, and that they could furnish a copy of the report to the attorney for the plaintiff, as well as to the attorney for the defendant. The court says that the right to a physical examination of an adverse party did not exist in the state of New York prior to the adoption of the amendments to Section 873 of the Code of Civil Procedure. That section does not require the physician to make a report to any one. As the examination is made in behalf of the defendant, at its expense and because it is ignorant of the nature and extent of the plaintiff's injuries, unless the physician communicated the result of the examination to the defendant's attorney, the attorney would be as ignorant of the plaintiff's physical condition after the examination as he was before. It is therefore to be expected that the results of the examination will be communicated to the defendant's attorney. The physician cannot be required to file a report, either with the referee or with the clerk of the court, nor can he be compelled to make a formal report to either party. Although the physicians are appointed by the court they are not thereby constituted a commission to hold an inquisition on the physical condition of the plaintiff. They are simply to testify on the trial as other witnesses to the facts they ascertained from such examination.

Valid Ordinance to Protect Food from Flies and Dust

(*Barrett et al v Rietta et al (Ala) 93 So R 636*)

The Supreme Court of Alabama, in holding valid Sections 1099, 1101 and 1119 of the code of the city of Birmingham, says that the capacity of dust and flies to transmit or to disseminate disease germs or other infectious matter is generally appreciated. The municipal police power to preserve the public health comprehends the authority to enact ordinances to protect public consumption from the harmful or hazardous consequences of eating food that may become infected through exposure to dust and flies. Section 1099 makes it unlawful to sell or offer for sale any contaminated, adulterated or unfit food intended for human consumption or any food which has been exposed to dust, flies or vermin. The alternative clause quoted must be referred to "any food that has been so exposed while under the control or possession of the offender."

This clause was not intended to penalize a dealer for exposures to dust, flies or vermin that had been accomplished before the food came into the possession of the local dealer. "Contaminated, adulterated, or unfit" food is forbidden sale by the preceding provisions of the section, hence, the court's conclusion that the section is not unreasonable, oppressive, or otherwise invalid as imposing irrational restraint on the sale of foods. Section 1101 makes it unlawful to maintain or conduct any place where food, milk, ices or beverages are manufactured, prepared, or served, unless all of the doors, windows or other openings are properly screened, provided, however, that screen doors may be kept open if electric fans are effectually used and effectually prevent flies from coming in. Considering Sections 1099 and 1101 together, the exposure to flies that these sections inhibit is not an exposure that contemplates perfect immunity from contact with flies. The inhibited exposure is that which results from failure to observe the provisions of Section 1101, or that which results from unnecessary or unreasonable subsection of articles of food to the contact of flies. So construed, these sections are valid. Section 1119 requires that foods sold or offered for sale be kept indoors, and all doors, windows or other openings be kept closed or screened as provided in Section 1101. This requirement that foods shall be kept inside the building is a reasonable regulation. Its design is to avoid the contaminating effect of dust and flies, an obviously reasonable precaution, and this section is valid. Furthermore, give the valid exercise of the authority to define offenses of the present nature, and to penalize infractions thereof, the ascription of a distinct offense to each day's failure to observe the municipal mandate is, manifestly, a valid exercise of the power conferred.

Damages for Mental Suffering—Injury to Pregnant Woman

(*Davis Agent v Murray (Ga) 115 S E R 327*)

The Court of Appeals of Georgia, Division No. 2, holds that there may be a recovery for mental suffering resulting directly from a physical injury. Thus, a pregnant woman, who has, as a result of another's negligence, received a physical injury of such a nature as to produce within her mind a fear and apprehension that she will give birth to a deformed child as a result of the injury, may, whether such deformity actually occurs, recover damages for mental suffering resulting from the injury.

The fetus of a pregnant woman being part of her person, she is entitled to recover for any actual physical injury sustained by the fetus, including mental pain and suffering proximately resulting therefrom. When as a result of an injury to such fetus, the child is born deformed, the mother is entitled to recover damages, not only for the physical injury, but also for her mental suffering on account of the mortification and disappointment at the birth of a deformed child. The pain and suffering to the mother thus caused may be continued throughout her entire life, and therefore be permanent and in computing damages for the injury the permanency of the pain and suffering may be considered. The mother, however, cannot recover damages for any mental suffering which she may undergo occasioned by the child's deformed condition continuing after birth, nor for any pain and suffering which the child may undergo.

The foregoing principles of law were properly given in the charge to the jury in this case, in which Mrs. Murray sued for damages claimed by reason of a collision between a train and an automobile in which she was riding at a time when she was pregnant about two months, which was followed seven months' later by the birth of a child with two toes missing from the left foot. Demurrers to the plaintiff's petition were properly overruled. But, since there was no evidence which would authorize the jury to infer that the deformed condition of the child at its birth was caused by the physical injuries received by the plaintiff and alleged to have been inflicted by the defendant, it was prejudicial to the defendant for the court to instruct the jury on the assumption that there was an issue of fact as to whether or not the deformity was caused by the defendant's negligence and for this reason the judgment obtained by the plaintiff is reversed, and a new trial is awarded the defendant.

of animal experimentation and vivisection bids fair to have a clear field, and ignorance and error will be liable to play havoc in the combat for the prevention of disease and the protection of the public from it

Benefit to Animals of Medical Experimentation—Whenever preservation measures are undertaken, Parker points out, the knowledge gained by physicians from centuries of observation on human beings and from years of experimental work on animals is immediately made available in bettering the conditions in wild animal life. Wild animals, therefore, profit as much from the advancement of medical science through observation and experimentation as man does himself.

How Animal Experimentation Has Assisted in Control of Contagious Diseases Among Animals—Veterinary science, on which is based all animal disease control work, according to Howard, depends for its advancement at the present day largely on the new truths which scientific investigators reveal to it, and the day which sees the restriction or prohibition of animal experimentation by competent men will also mark the decline of veterinary science and of the veterinary profession in its chosen field of service to the animal kingdom.

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Opportunity to Enlighten Hospital Trustees C Frothingham Boston —p 57

Epinephrin Therapy A Worcester and D O'Hara Waltham Mass —p 58

What We Owe to Past Investigators for Our Present Methods of Prevention and Treatment of Tuberculosis E O Otis Boston —p 59

Medicine and Law H L Shattuck Boston —p 63

Case of Torsion of Greater Omentum M A McIver Boston —p 65

Preventorium and Its Relation to Tuberculosis in Childhood R Clifford Boston —p 66

Torsion of Omentum—The main symptom in McIver's case was pain, localized just to the right of the umbilicus. It was sharp and knife-like in character, and did not radiate. There was no nausea or vomiting. The temperature was 102 F. A diagnosis of acute appendicitis was made. On opening the abdomen an area of necrotic omentum was seen lying just to the right of the incision. At the base was a very definite twist which had evidently cut off the blood supply. The appendix, gallbladder and stomach were perfectly normal. The gangrenous portion of the omentum was resected. The patient was discharged well on the thirteenth day.

Colorado Medicine, Denver

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Report of Three Years Public Health Work of Denver Venereal Disease Clinic Women's Division M C T Love Denver —p 5

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Pasteur's Influence on Medicine C E Edson Denver —p 15

Journal of Infectious Diseases, Chicago

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*Experimental Study of Methods Available for Enrichment, Demonstration and Isolation of *Bacillus Botulinus* in Specimens of Soil and Its Products in Suspected Food in Clinical and in Necropsy Material B J Dubovsky and K F Meyer San Francisco —p 501

*Distribution of Spores of *Bacillus Botulinus* in California II K F Meyer and B J Dubovsky San Francisco —p 541

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*Distribution of Spores of *Bacillus Botulinus* in United States IV K F Meyer and B J Dubovsky San Francisco —p 559

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*Occurrence of *Bacillus Tetani* in Soil and on Vegetables VIII B J Dubovsky and K F Meyer San Francisco —p 614

Safe Method for Securing Anaerobiosis with Hydrogen IX A C Richardson and C C Dodder San Francisco —p 617

*Pathogenicity of *Bacillus Botulinus* X G E Coleman and K G Meyer San Francisco —p 622

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Isolation of *Bacillus Botulinus*—In this paper Dubovsky and Meyer describe the methods employed for the enrichment and demonstration of *Bacillus botulinus* in specimens of soil and its products. The composition of the medium, the preparation and heating of the samples, the period of incubation and storage, the identification of the toxin and the isolation of the organism from toxic enrichment cultures are discussed and their value considered in the light of numerous experiments. It is emphasized that inexperienced workers should question their results until they eliminate the danger of laboratory contamination by continuous, painstaking vigilance, proper sterilization of the culture mediums, glassware, etc., and by repeated control examination. The methods applicable for the examinations of suspected food, clinical and necropsy material are described in detail.

***Bacillus Botulinus* in California**—The examination by Meyer and Dubovsky of 624 specimens of soil, vegetables, fruits, feeds, manure and sewage collected in thirty-six counties of California and studied by means of 894 cultures definitely indicates that the spores of *Bacillus botulinus* are very widely distributed. Approximately 30 per cent of the samples produced toxic cultures, 74.8 per cent of the identified toxins were neutralized by a Type A, 22.1 per cent by a Type B, and 3.1 per cent by a polyvalent antitoxin. The evidence strongly suggests that the natural habitat of *B. botulinus* is found in virgin mountain or forest soil. *B. botulinus* is also present in cultivated garden and field soils and their products. Vegetables and fruits bought in various cities and towns of California carry the spores of *B. botulinus*. *B. botulinus*, Type B, occurs predominantly in cultivated and manured soils and is probably a mutant of the fixed Type A.

***Bacillus Botulinus* in California**—It is shown by Coleman that the cultivated soils of a narrow strip of coast line in Santa Barbara County, California, are heavily contaminated with the spores of *Bacillus botulinus* Type A, as well as with those of *B. tetani* and that the virgin soil from the mountain range behind this strip of land also contains the spores of *B. botulinus* Type A.

***Bacillus Botulinus* in United States**—A general survey made by Meyer and Dubovsky, during which 1,538 soil, vegetable, feed and manure specimens of every state of the United States, except Virginia, have been studied for the presence of the spores of *Bacillus botulinus* reveals that *B. botulinus* is a common soil anaerobe of the Western states of the Cordilleran system. It is less frequently encountered in the Atlantic states and is relatively rare in the Middle states, the great plains and the Mississippi Valley. The soil of the Western states, inclusive of the great plains, yields, mainly, *B. botulinus*, Type A, while the Mississippi Valley and Great Lakes region is characterized by a striking predominance of Type B. Similarly prevalent is this latter type in the Atlantic states of Maryland, Delaware, New Jersey, Georgia and South Carolina, while scattered findings of Type A in Maine, New York and Pennsylvania indicate the existence of breeding places in virgin forests and mountains. Soils which are subjected to intensive cultivation and fertilization contain, as a rule, *B. botulinus*, Type B. *B. botulinus* spores are far more prevalent in virgin and pasture soils than in dirt, soil or manure collected from animal corrals, pig pens, etc. Vegetables, fruits and feeds are frequently contaminated with the spores of *B. botulinus*. String bean pods and leaves, moldy hay, ensilage and decayed vegetation may yield a relatively high percentage of positive cultures. Human and animal botulism is not infrequent in those states in which *B. botulinus* Type A predominates, or in which the percentage figures of positive cultures exceeds from 20 to 30 per cent. From a practical standpoint however, *B. botulinus* is ubiquitous and this survey gives no assurance that heat resistant spores cannot be found anywhere and at any time. The theory which claims that all the pathogenic anaerobes are regular inhabitants of the intestinal canal of animals, the authors assert deserves renewed investigation in the light of this survey on *B. botulinus*.

***Botulinus* Spores in Alaska and Canada**—*Bacillus botulinus* has not been demonstrable in the coast land soil of the

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Type B, has been cultivated in moraine, glacier and mountain soil collected around Lake Louise in the Canadian Rockies. Soil samples obtained from the provinces of Prince Edward Island, Nova Scotia, Quebec, Ontario and British Columbia have also furnished positive cultures.

Botulinus Spores in Belgium and Other Countries—*Bacillus botulinus*, Type B, has been demonstrated in soil and vegetable specimens collected in Belgium, Denmark, England, the Netherlands and Switzerland. *B. botulinus*, Type A, has been found consistently absent. The spores are widely distributed, but they are neither numerous nor very resistant to heat.

Botulinus Spores in Hawaiian Islands and China—*Bacillus botulinus*, Type B, is frequently found in the soils obtained from the Island of Oahu, in the territory of Hawaii, and from the provinces of Chihli and Shansi, in China. Type A has been found only in two Hawaiian and in one Chinese soil specimen.

Bacillus Tetani in Soil and on Vegetables—The spores of *Bacillus tetani* are frequently encountered in well manured cultivated or garden soil, and on vegetables obtained from several states east of the Mississippi, Switzerland and China. In the United States even virgin forest soil has yielded cultures of *B. tetani*. The soil of the Western states is relatively free from this anaerobe.

Pathogenicity of Bacillus Botulinus—Coleman and Meyer assert that massive doses of toxin-free spores of *Bacillus botulinus* are pathogenic when introduced into the animal body. These spores and the vegetative forms arising from them are rapidly disseminated throughout the tissues of the body. Toxin-free spores of *B. botulinus* germinate, and the vegetative forms arising from this germination multiply and liberate toxin in the animal body.

Heat Resistance of Bacillus Botulinus Spores—The heat resistance of *Bacillus botulinus* spores in the juices of seventeen varieties of canned food examined by Esty and Meyer shows a variation from less than ten minutes to 230 minutes at 100 C.

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- Arteriosclerosis and Hypertension J W Morris Louisville—p 841
- Present Views Regarding High Blood Pressure F C Askenstedt Louisville—p 845
- Deafness from Wax Impactions Three Cases S G Dabney Louisville—p 854
- Partial Report of Examination of Eye Ear Nose and Throat of Patients in Eastern Kentucky State Hospital J A Stucky Lexington—p 855
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Missouri State Medical Association Journal, St. Louis

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- Paralysis Agitans D S Booth St. Louis—p 4
- Scopolamin Morphine Seminars in Second Thousand Deliveries in Barnes Hospital O S Krebs and L R Wilson St. Louis—p 12
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Arterial Hypertension—Having determined the cause of the hypertension and the extent to which it has caused secondary systemic changes, Milne says that a rational dietary, calculated to support the nutrition and strength of the subject, should be adopted, in addition to the necessary limitation of exercise and various hygienic, psychopathic, eliminative hydrotherapeutic, electrotherapeutic, and sometimes surgical remedies, administered to combat the etiologic factors involved and to lower the existing state of hypertension and so at least prevent the incidence of the serious terminal events of this disease.

Nebraska State Medical Journal, Norfolk

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- Focal Infection A D Dunn Omaha—p 5
- Suprapubic and Perineal Prostatectomy Advantages of Each E. Davis Omaha—p 9

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New York Medical Journal and Medical Record

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- Aseptic Local Anesthesia as Applied to Anal Region With Especial Reference to Anesthetic Composition E G Martin Detroit—p 100
- *Thoracic Abdominal Gate J J Rectenwald Pittsburgh—p 102
- Dawn of Surgery Ritual Mutilations of Primitive Magic and Circumcision J Wright Pleasantville N Y—p 103

Thoracic Abdominal Gate—The object of the instrument devised by Rectenwald is said to be to make a gate or trap door for the pleura, lung, stomach, liver, colon, cecum, ovaries, uterus and bladder. By means of this instrument the thorax and abdomen can be opened and closed at will and treatments may be made over an extended period of time without repeated incisions. The conception of the instrument was brought about by Rectenwald's desire to apply radium directly to cancer of the stomach in the form of needles, tubes or plates over an extended period of time and avoiding repeated incisions.

New York State Journal of Medicine

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- *Use of Schick Test and of Toxin Antitoxin Injections in Prevention of Diphtheria W H Park New York—p 1
- *Results of Active Immunization with Diphtheria Toxin Antitoxin in the Public Schools of New York City (Manhattan and the Bronx) A Zinger New York—p 6
- Gonococcal Vulvovaginitis in Children as a Hospital Problem E J Wynkoop Syracuse—p 7
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- Treatment and Prevention of Certain Mental Disorder H A Cotton Trenton N J—p 18
- *The Problem Child S R Leahy Brooklyn—p 23
- Remarkable Freedom from Local Recurrence Following Chemical Removal of Advanced Cancerous Breast C W Strobell New York—p 27

Use of Schick Test and of Toxin-Antitoxin Injections in Prevention of Diphtheria—The New York Department of Health has under observation and has indexed 180,000 children of whom 90,000 have been Schick tested. Of these 90,000 about 60,000 gave the negative Schick test originally, about 20,000 were negative on the retests after the injections of toxin antitoxin while about 10,000 of those who were originally positive and who received two or three injections have either not been retested or on retest were found to be positive. During January, February and March in 90,000 untreated schoolchildren there occurred fifty-four cases of diphtheria and in 90,000 who had been Schick tested and when positive were given two or three injections of toxin antitoxin there were only twelve cases. Therefore among 90,000 untreated schoolchildren there developed four and one-half times as many cases of probable diphtheria as developed in the 90,000 tested children. Among 8,200 children who were originally Schick positive and were not retested after the injections four cases of diphtheria developed. The 8,200 were as a rule among the latest to receive the injections. The 1,800 children who in spite of the injections developed insufficient antitoxin to prevent on a retest a moderately

ion, showed the highest incidence of. It emphasizes the necessity of a Schick after the completion of the injections still give the positive reaction should es of injections. As corroborative of teresting to note that during the past cases and deaths in New York City us than ever before. Every effort is to he immunization of every school child

Immunization with Diphtheria Toxin- s of the retests for active immunity in that with the same mixture of toxin-response in the schools has varied in ildren as much as from 21 to 75 per s of one or two injections of toxin- time of the retest to the children who immune after the first series of two ed by the development of an active o 80 per cent of the children so treated en in the various schools who are wo to four doses of toxin-antitoxin immunity in the proportion of from symptoms of anaphylactic shock were of the second series of toxin-antitoxin now being given in the schools three titoxin instead of two. The dose is s are given at an interval of two weeks

sulphate on Ambulatory Cases of Auric- twenty-two ambulatory cases of auric- ed on by Farnum, only three responded with normal auricular ventricular hree cases, one case remained regular

The remaining two cases are still sulphate having been given about six hree cases which became regular, the : bettered to the extent hoped for or uestigators. In cases with unstable ith rapid rate, pulse deficit, and little nefit was derived from the administra- phate. The patients were in some

All were glad to return to digitalis, r former compensation under that drug. —It is Leahy's opinion that the future ry lies in preventive measures. These in order to have their greatest effect, in the life of the individual when he ace reality and to emancipate himself ntricity. This means that the problems duct disorders of early childhood are linary but often entirely psychiatric

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Daily ingestion of suf
results in rapid increas

acidophilus and in due course of time, if the quantity is sufficient, all other bacteria in the intestinal flora are reduced to a negligible quantity. In some instances, however, it required more than 300 gm of lactose per day to establish *Bacillus acidophilus* as the predominating organism. Unfortunately the quantity of these sugars necessary is too large to be continued over long periods of time, hence the practical application of this method must be very limited. The researches made by Bass on the use of cultures of *B. acidophilus* for therapeutic purposes, including a large number of experiments on twenty-three different human subjects have yielded results which practically agreed with those of Rettger and Cheplin. A note of warning is sounded against making the same kind of mistake with *B. acidophilus* that was made with *B. bulgaricus*. Already enthusiastic workers have reported most striking therapeutic results from the administration of broth cultures of *B. acidophilus* in teaspoonful doses, only a small fraction of the amount of culture that others have found necessary to change noticeably the intestinal flora. Commercial interests have already placed on the market *B. acidophilus* in the form of tablets, capsules and liquids, and physicians are prescribing them. Bass examined some of these preparations to determine the number of viable *B. acidophilus* contained therein. In the instance of tablets, none of those examined was found to contain as many as 1,000 viable bacteria of any kind per tablet. If it should be granted that all the viable bacteria present were *B. acidophilus*, it would take more than 1,000,000,000 tablets or more than 20 tons, to contain as many bacilli as are contained in 1,000 c.c., or the usual daily dose of the *acidophilus* milk, the quantity found, by most investigators at least, to be necessary to transform the flora. Bacteria were more numerous in the commercial liquid cultures examined. If they were all *B. acidophilus*, a patient would have to drink 7 or 8 gallons daily to get as many as he would in 1,000 c.c. of the *acidophilus* milk culture. Only fresh cultures produced according to the proper bacteriologic methods should be used.

Epilepsy with Megacolon and Polymastia—Discussing the etiology of epilepsy, three possibilities are considered by Block. (1) epilepsy and megacolon may represent (equally) evidence of defective development of the nervous system, (2) the megacolon by pressure may produce an alteration in the cerebral circulation, and (3) the resulting constipation from megacolon may furnish a toxic cause for convulsions in those predisposed to them. In the case reported no other physical defect could be found except polymastia, a convolitional atrophy of the skull, from apparent pressure, but without the usual symptoms of pressure being present, full tortuous veins in the right fundus, and the megacolon. While the last was not of the extreme degree found in many of the published reports and fatal cases, it is still sufficient to produce abdominal distension, tympany, and constipation, and Block says must be regarded as pathologic. The occurrence of polymastia, Block says, must be regarded as a stigma of degeneration, but whether such atavistic phenomena should be regarded as evidence of physical strength or weakness is undecided. The conclusion reached by Block in regard to his case is that increased intra-abdominal pressure caused a gradual increase in intracranial pressure, which in turn caused a convolitional atrophy of the skull, and tortuous veins of the right retina.

Torsion of Appendices Epiploicae—Black asserts that only sixteen cases of true torsion of the appendices epiploicae within the abdominal cavity have been reported in the literature. He adds one case. A man aged 60 after serving as an active pallbearer at the funeral of a friend whose casket was very heavy, suddenly felt a rather severe pain in the mid left region of the abdomen, which disappeared almost

it returned, became rather severe, and the man went to bed At 9 o'clock the next morning he felt perfectly well, but the leukocyte count was 9,000 At 3 p m the leukocyte count was 10,000 and there was unquestionable tenderness on pressure over the left middle and lower abdominal regions The next day at about 10 a m, the fourth day since the onset, the temperature was 99 F, the white blood cells numbered 11,200, and the soreness and tenderness had distinctly localized over a point on the left side corresponding to McBurney's point on the right It looked like a typical left sided appendicitis It was decided to operate Living immediately beneath an edematous peritoneum almost completely encompassed by the left border of the omentum was a large bluish black mass the size of an orange It was rapidly becoming gangrenous and when isolated was found to be an appendix epiploica attached to the lower portion of the descending colon Its pedicle was twisted several turns on itself

Dermoid of Conjunctiva—In Miller's case the family history and personal history were negative A few weeks after birth, the child's parents noticed a growth under the left eyelid A short time later a hair or two projected under the lid and these continued to grow in length and increase in number until there were six or seven long black hairs growing from under the lid These hairs grew rapidly and were frequently cut to prevent their hanging too far down on the face, but they were always left sufficiently long for the cut ends to project beyond the lids The tumor was removed It contained a yellowish fluid and a small bony mass the shape and size of the crown of a canine deciduous tooth

Texas State Journal of Medicine, Ft Worth

December 1922 18 No 8

- Chronic Nontuberculous Lung Diseases W W Watkins Phoenix Ariz—p 396
Pulmonary Abscess J N White Texarkana—p 398
Indications and Contraindications for Artificial Pneumothorax in Pulmonary Tuberculosis A E Greer Houston—p 400
Tuberculosis Responsibility H L Wilder Clarendon—p 402
*County Sanatoria for Far Advanced Consumptives J B McKnight Sanatorium—p 405
Relationship Between Chronic Suppuration Nasal Sinusitis and Pulmonary Infections E M Sykes San Antonio—p 408
*Administration of Antitoxin in Early Treatment of Diphtheria L M Whitsitt Ft Worth—p 410

Hospitals for Advanced Cases of Tuberculosis—The hospital for advanced cases of tuberculosis in McKnight's opinion should be so situated constructed and managed as to draw from the community the vast number of advanced cases spreading infection in family circles in addition to the group of homeless or near-homeless forming at present the bulk of cases in such institutions In the interest of the community, as well as of the individual patient the admission of these cases to an institution should come early in their course With the right arrangement and regimen calculated to relieve suffering and lead where possible, to improvement or arrest of the process, the hospital for advanced cases is bound to win rapidly the support of the medical profession and the community and become a powerful agency in the fight for the suppression of the disease

Prevention of Diphtheria—Whitsitt emphasizes that the mortality would be materially reduced if physicians would insist on a more hygienic condition of the nose and throat, removal of enlarged tonsils and adenoids keeping away from poorly ventilated public places especially during the fall winter and early spring when catarrhal conditions are more common The use of the Schick test and the establishment of a prolonged immunity by the use of toxin antitoxin and the universal use of antitoxin in all exposures will prove specifically prophylactic It will never be possible Whitsitt believes to lower the mortality from diphtheria by elimination as has been accomplished in typhoid and yellow fever because of the great number of carriers While diphtheria is contagious to the nonnatural immune he is of the opinion that a large percentage of cases in children between the ages of 1 and 2 years are of auto-infectious origin because they are carriers, and at the first opportunity presented which is caused by a catarrhal throat or nose the germs become active

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below Single case reports and trials of new drugs are usually omitted

Annals of Tropical Medicine and Parasitology, Liverpool

December 1922 26 No 4

- *Unusual Type of Nodular Leprosy in Sudan R G Archibald—p 41
Ancylostoma Braziliense C Lane—p 347
Intra Uterine Infection with Ancylostoma Caninum in Dogs S Adler and E J Clark—p 353
Cestodes from Indian Birds Ligula Intestinalis T Southwell—p 357
*New Malaria Parasite of Man J W W Stephen—p 38
Bionomics of Stegomyia Calopus Meigen in Brazil C J Yount—p 389
Occurrence of Larvae of Onchocerca Volvulus (Fleckhart 189) in Skin of Natives of Gold Coast J F Corson—p 407
Case of Sleeping Sickness (T Gambien) Treated by Biver 205 J W W Stephens and W Yorke—p 421
Bionomics of Stegomyia Calopus Meigen in Brazil Part II I M Gordon—p 425
*Role of Cockroaches in Disease J W S Macfie—p 441
Occurrence of Xenopsylla Astia Roghe in West Africa A M Evans—p 449
*Case of Blackwater Fever A Patrick—p 451
Case of Trypanosomiasis A J Mackenzie—p 457
Onchocerca Volvulus J W S Macfie and J F Corson—p 49
New Species of Filarial Larva Found in Skin of Natives in Gold Coast J W S Macfie and J F Corson—p 465

Unusual Type of Nodular Leprosy in Sudan—In the case reported by Archibald the eruption apparently commenced on the face in the form of small shotty papules similar ones eventually appearing on the forehead ear trunk and upper and lower extremities The eruption caused little or no inconvenience On examination it was found that the skin of the face neck anterior and dorsal aspects of the trunk and the flexor and extensor aspects of the arms and legs showed numerous miliary papules varying from 0.5 to 0.5 cm in diameter The majority of these lesions were discrete with a smooth surface circular contour pink color, and of a shotty consistency some of them showed a slight inflammatory reaction at the base In certain areas more especially on the neck and arms many of the papules showed a circular depression or umbilication in the center while others showed simply a pale central area No pustulation was noted The largest lesions were on the face and here the majority of them were discrete whereas those on the ear had coalesced and caused considerable thickening of the tissues producing an appearance not unlike that of hematomata auris Papules were also present over both supraciliary regions where a slight degree of madarosis was noted The skin of the arms was more affected than that of the lower extremities both flexor and extensor aspects being involved The intervening portions of the skin presented no abnormalities except in a few areas on the face where there was a certain degree of erythema No nodules or ulcers were detected in the buccal mucous membrane but the posterior fauces and larynx were slightly inflamed The submaxillary and axillary lymph glands were slightly enlarged and firm on palpation The diagnosis was made only when microscopic examination of hematoxylin eosin stained preparations showed numbers of acid fast bacilli morphologically resembling leprosy bacilli

Plasmodium Ovale New Malaria Parasite—The characteristics of the parasite found by Stephen so far as concerns the medium forms are a nonameboid pigmented compact round or oval parasite resembling the quartan form in a red cell showing Schuffner's dots which is either normal in size or only slightly enlarged The pigment so far as can be judged in stained specimens appear to be brownish black and granular rather than spicular A double infection of a red cell was only seen once No form that could be interpreted as gametes were seen This parasite appears to resemble that found by Ahmed Emin in 1914 in the case of six pilgrims at Camaran in the Red Sea and figured and described by him as *Plasmodium zerau var minuta* Stephen proposes to term his organism *Plasmodium ovale*

Role of Cockroaches in Disease—The following organisms appeared to pass unharmed through the alimentary tract of the roach *P. tripunctata americana* Ba. *one of the* *large* *to*

cysts of *Endameba histolytica*, *E. coli* and of an endameba of a monkey resembling *E. coli*, cysts of *Giardia intestinalis*, and eggs of *Ancylostoma duodenale*, *A. ceylonicum*, *Necator americanus*, *Ascaris lumbricoides*, *Trichuris trichiura*, *Taenia saginata*, and *Schistosoma haematobium*. On the other hand, gonococci, *Endameba histolytica*, *E. coli*, and an endameba of a monkey resembling *E. coli* (in the vegetative stages), eggs of *Aphnochaeta ranthina*, and, in two experiments each, *B. typhosus*, *B. paratyphosus* B, and *B. dysenteriae* (Flexner Y) were not recovered in the feces of cockroaches after experimental feeding. No evidence was obtained that any of the organisms used in the experiments established themselves as parasites in the intestine of the cockroaches.

Case of Blackwater Fever—A case is described by Patrick in which hemoglobinemia was marked. The blood urea was found to be much increased after a short period of anuria.

British Medical Journal, London

Jan 6 1923, 1, No 3236

Acute Constitutional Symptoms Due to Radiations H Rolleston — p 1

*Investigation of Dyspeptics J Ryle — p 5

*Further Clinical Experience with Insulin in Treatment of Diabetes Mellitus F G Banting, W R Campbell and A A Fletcher — p 8

*Possible Mode of Causation of Diabetes Mellitus L B Winter and W Smith — p 12

*Vitamin Content of Certain Proprietary Preparations K H Coward and A J Clark — p 13

*Aptitudism and the Anencephalic Syndrome D L Barlow — p 15

*Purpura Treated by Injection of Human Blood M Dixon — p 16

*Treatment of Epilepsy J McCartney — p 16

*Trauma and Appendicitis C J G Taylor — p 17

Variations of Normal Temperature H H Haward — p 17

Investigations of Dyspeptics—Ryle does not believe that there is, or ever will be, a place in medicine for such a specialism as gastrology. Probably less than one third of all chronic dyspepsias are due to disease of the stomach, and even in many of these the primary factors have been situated elsewhere. The introduction of chemical and radiographic diagnostic methods has been of inestimable value, but the chief value of these methods, Ryle believes, will finally be in the direction of helping to make a better interpretation of symptoms and so to become more skilled at clinical diagnosis. Early and accurate diagnosis is the first essential for adequate treatment. Early diagnosis depends on appreciation of possibilities and causes and on good clinical sense, accurate diagnosis, in many of the dyspepsias, can be arrived at only with the aid of routine investigations.

Insulin Treatment of Diabetes Mellitus—A general plan of investigation and treatment of patients has been adopted provisionally, by Banting and his associates to determine those patients who require treatment with insulin and the requisite dosage to be employed. On admission to hospital the history and physical condition of each patient is investigated. Patients admitted in coma or in the precomatous state, whether of the accidental type, occurring with a good carbohydrate tolerance, or as a sequel to slowly deteriorating carbohydrate tolerance, are immediately given insulin treatment. For other cases a diet based on the normal basal calory requirement for the age, height, weight and sex of the patient is calculated. This diet contains sufficient protein to maintain nitrogenous equilibrium, and carbohydrates and fats in such a ratio as to avoid the excessive production of acetone and diacetic acid. Having patients fast for a day has helped to attain constancy of sugar excretion more rapidly. Patients are kept in bed for a variable period following admission to hospital, and afterward only light exercise is permitted. Examinations of the blood and urine are carried out daily for a period of a week or more. At the end of this period on a constant diet the patients who are sugar free are advised to continue dietetic treatment in view of the shortage of insulin. Those who are showing decided glycosuria and hyperglycemia, with possibly various degrees of acidosis in addition, are selected for insulin treatment. Having a preparation of insulin known to be potent and to contain approximately one unit to 1 cc according to the pharmacologic assay, the patient is given an amount calculated to be somewhat less than that required to render the

urine sugar free. Insulin is administered, according to the amount required, in one, two, or three doses, at or shortly before meals. Subcutaneous injection is the method of choice. By examination of the urine at short intervals it is determined approximately when the patient becomes sugar free, and the subsequent dosage is adjusted to maintain this condition. Special care is taken that the food consumed by each patient is appetizing in appearance, palatable to the taste, and well served. Complete records are kept of twenty-four hour specimens of urine, which is collected in the usual manner, and examined qualitatively and quantitatively for sugar, acetone, diacetic acid and total nitrogen, and the usual routine tests are made for volume, specific gravity, albumin, and character of the sediment. Up to the present time more than fifty cases of diabetes mellitus have been treated with insulin, and some have been under treatment continuously for several months. Although the most striking results have been seen in children and young adults, all patients have been benefited by the treatment. Under treatment with insulin, in patients who are not otherwise amenable to treatment, (a) glycosuria is abolished, (b) ketones disappear from the urine and the blood, (c) blood sugar is markedly reduced and maintained at normal levels, (d) the alkali reserve and alveolar carbon dioxide of patients suffering from acidosis and in a state of coma return to normal, (e) the respiratory quotient shows evidence of increased utilization of carbohydrates, (f) the cardinal symptoms of diabetes mellitus are relieved and the patients show marked clinical improvement. Insulin is a specific in the treatment of diabetic coma. Certain procedures are suggested as a guide in its administration. Hypoglycemic reactions in man have been studied. Hypoglycemic reactions following insulin are relieved by the administration of carbohydrates and also by the injection of epinephrin.

Cause of Diabetes Mellitus—It has been shown by Winter and Smith that the normal blood sugar in man and animals has a lower rotatory power than would be given by the α - β equilibrium form of glucose as deduced from the copper reduction value. Various facts mentioned suggest that normal blood sugar is gamma glucose. That ingested glucose or fructose is rapidly converted into normal blood sugar was shown by feeding experiments on normal persons. After administering from 100 to 150 gm glucose or fructose no alteration in the nature of the blood sugar could be detected. In cases of diabetes mellitus this sugar is not present in amounts susceptible of detection by the method employed. The polarimeter reading in these cases is initially greater than the copper reduction value, and the curve gradually falls until the copper value is reached. This suggests that besides α - β glucose, disaccharids or other substances with a polarimeter copper reduction ratio greater than that of α - β glucose are present in the blood of diabetic persons. The author suggests that α - β glucose cannot be directly stored or utilized, but that an enzyme is responsible for the conversion of α - β glucose into gamma glucose. The absence or inactivation of this enzyme is suggested as the direct cause of diabetes mellitus.

Vitamin Content of Certain Proprietary Preparations—The vitamin content of certain well known proprietary preparations which are advertised in the medical press as containing vitamins was investigated by Coward and Clark. The preparations tested contained vitamins A and B, except in one instance in which case the tests failed to show the presence of vitamin A in the quantities tested. A comparison between the vitamin content of the proprietary preparations and the vitamin content of those ordinary foods which are rich in vitamins shows that the former contain less vitamins than the latter. The vitamin A content of the proprietary foods was in all cases less than that of butter obtained from grass fed cows and less than one hundredth that of active specimens of cod liver oil. The vitamin B content of the proprietary foods was in all cases less than that of wheat germ or of yeast. None of the preparations is considered to be a substitute for cod liver oil as a source of vitamin A, for in no case does the total daily adult dose of the proprietary food contain as much as one tenth of the vitamin A content of a teaspoonful of cod liver oil.

Apituitarism and Anencephalic Syndrome—Four anencephalic fetuses were examined by Barlow. In each instance the anterior (pharyngeal) portion of the pituitary gland was found without much difficulty in its usual situation and resting on the body of the sphenoid. In none of the cases was any real attempt at the formation of a sella turcica apparent, though the gland was of a size approximating that in a normal full term fetus. In one instance a process of apparently neuroglial tissue, probably representing the pars nervosa, was found, and it is noteworthy that this was the only one examined comparatively soon after delivery. In all cases microscopic sections displayed a structure corresponding with the epithelial segment of the pituitary body—namely, strands of polygonal cells with somewhat granular protoplasm and rounded nuclei, separated by a loose connective tissue, in which were abundant thin walled vessels. From the position and structure of these glands Barlow has no doubt that they represent the epithelial portions of the pituitary. As a result of the discovery of the anterior segment of the pituitary gland in four successive typical examples of the anencephalic syndrome, Barlow thinks it may be concluded that the other features of the condition are certainly not due to apituitarism and that any conception of the functions of the gland based on such an assumption is erroneous.

Purpura Treated by Injection of Human Blood—The success of the treatment of hemorrhage of the new-born by injection of parental blood suggested to Dixon the use of the same method in purpura. The result has been most encouraging. Dixon has injected from 2 to 5 cc of blood taken from the brachial cephalic vein into the gluteal muscles. Clotting is prevented by sterilizing the syringe and needle in a solution of magnesium sulphate. The method has been used in four cases, with gratifying results in all and in the very early cases with complete abortion of the attack.

Treatment of Epilepsy by Potassium Bromid and Borax—Eighteen patients have been treated by McCartney by this method. He found that he obtained the best results with potassium bromid, 15 grains, borax purificatus, 7½ grains, Fowler's solution, 2 minims, three times daily. The changes noted in the condition of the patients were (1) marked general mental improvement, (2) freedom from stupor after convulsions, (3) disappearance of irritability and quarrelsome tendencies, (4) complete change of habits. The continuous treatment has had no deleterious effect on the health of the patients.

Trauma and Appendicitis—In both of the cases reported by Taylor the attack was definitely ushered in by violence—in the one by a direct blow on the abdomen, in the other by a severe strain.

Journal of Laryngology and Otology, Edinburgh

January 1923 38 No 1

- Present Status of Radium in Laryngeal and Esophageal Cancer in United States H H Forbes New York—p 1
Septic Sinus Thrombosis Diagnosis and Treatment W Milligan—p 9
Identification of Larvæ of Diptera (Flies) Which Cause Nasopharyngeal and Aural Myiasis in Man W S Patton—p 18
Spasmodic Phinitis Critical Review St C Thomson—p 28

Medical Journal of Australia, Sydney

Dec 16 1922 2 No 25

- *Basal Metabolic Rates in Exophthalmic Goiter R L T Grant—p 697
Chronic Suppurative Otitis H M Jay—p 704
Postgraduate Work in Europe J W D Hooper—p 707
Uterovaginal Fistula H Bullock—p 709

Partial Thyroidectomy Better than Medical Treatment of Exophthalmic Goiter—The basal metabolism of ten cases of exophthalmic goiter and one case of toxic goiter was studied by Grant. In every case the basal metabolic rate was raised above the standard accepted as the normal average when taken prior to any active treatment. From observation of these cases Grant is convinced that the medical treatment of exophthalmic goiter is unsatisfactory and that the best results are given by removal of part of the affected gland. The majority of the patients in this series had their operation performed under local anesthesia, procain being used.

South African Medical Record, Cape Town

Dec 9 1922 20 No 23

- The Legal Case S V Elliott—p 449
Control of Malaria in South Africa G A P Ro—p 40
Case of Late (Tenth Day) Postpartum Eclampsia H B Walker—p 458
Undulant (Malta) Fever in South Africa D P Marais—p 40
Modern Treatment of Asthma A Bloom—p 464

Annales de Médecine, Paris

December 1922 12 No 6

- *Hirschsprung's Disease R Bensaude and P Hillemand—p 4
*Treatment of Rheumatism M Roch and S Katzenelbogen—p 40
*Secretin K Djenab—p 475
*Diabetes Insipidus Lortat Jacob and Turpin—p 480

Megacolon—Bensaude and Hillemand review the question of megacolon. The diagnosis of typical cases is not difficult: extreme constipation, great enlargement of abdomen, characteristic roentgenograms, the tumor presents peristaltic movements at times, and the rectum which is usually empty will retain 2 or 3 liters of enema without discomfort. Some cases may give clinical signs of pneumothorax. Medical treatment should be tried, although it is usually without success. Surgery gives better results. Ileosigmoidostomy is comparatively easy and may be sufficient. Colectomy is dangerous yet may insure a final cure.

Treatment of Rheumatism with Casein—Roch and Katzenelbogen gave intramuscular injections of 0.5 to 2 cc of a 10 per cent solution of casein repeated after four or five days in twenty-six cases of rheumatism. The best results were obtained in acute cases. Subacute cases sometimes were also influenced favorably. One case of sciatica recovered perfectly. They advise this protein therapy only as supplementary to salicylic medication not in its place.

Secretin—Djenab found that secretin from the deep layers is more efficient than from the superficial layer of the mucosa. The action is much weaker if it is injected into a mesenteric vein and thus passes through the liver. Injections into arteries are also less effective than into the saphenous vein. Feeding animals with fats increases the amount of secretin.

Diabetes Insipidus—Lortat Jacob and Turpin give an extensive review of diabetes insipidus.

Bulletin de l'Académie de Médecine, Paris

Dec 12 1922 88 No 41

- *Tuberculosis and Pregnancy E Sergeant—p 466 Idem A Willeh—p 477
*Medicolegal Aspect of Therapeutic Abortion A Balthazard—p 480
*Herpes Zoster G Marinesco—p 487
*Knock Out and War Psychoses L Livet—p 501
*Organotherapeutic Action of Milk Cassoute—p 503
The Prizes Offered by the Académie—p 506

Tuberculosis and Pregnancy—Sergeant emphasizes that there are two principal types of tuberculosis to be considered. In one the tuberculosis was present before the pregnancy, in the other it became manifest during pregnancy or after delivery. In the first type three varieties can be distinguished: (1) Clinically recovered cases in which the infection flares up during the first weeks of pregnancy. Usually the women are young. An early abortion saved the lives in three such cases in Sergeant's experience. In another case a pregnancy occurring against his advice three years after an affection of an upper lobe had been allowed to come to term because the woman never felt as well as during the pregnancy. Ten days after delivery the tuberculous process in the lung was relighted and the patient succumbed in two months. (2) Cases with active but stationary lesion. The women contrary to the first variety are usually over 30 or 35 years of age. They appear to have adapted themselves to tuberculosis. These cases form the bulk of the statistics which show that some women even with lung cavities can endure several pregnancies. (3) Women with active tuberculosis which becomes more acute with the pregnancy. There is no indication for abortion in these cases because death is inevitable. The second principal variety includes latent tuberculosis in which clinical signs did not appear before gestation. In unilateral cases the prognosis may be of use. Bilateral cases of

ly good. Sergeant insists on the frequency of tuberculosis in pregnancy. In his private practice, in almost 26 per cent of eighty-nine tuberculous women, tuberculosis appeared less than ten months after delivery. In two thirds it was the first pregnancy. It is impossible to dogmatize, case must be considered individually.

Tuberculosis and Pregnancy—Wallich points out that even the optimists are not in reality optimistic about the relation of pregnancy to tuberculosis. Obstetric statistics are not reliable, because tuberculous pregnant women are usually sent to the medical clinic to avoid exposure of healthy mothers and infants.

Medicolegal Aspect of Therapeutic Abortion—Balthazard discusses the medicolegal questions arising from the fact that the French law prohibits every interruption of pregnancy. After discussing several theories, he agrees with those who see the legal foundation of therapeutic abortion in a state of necessity, the life of the mother being in extreme danger. The French law allows the physician to make any intervention which aims to cure the patient. He believes that this is better than the laws of other countries where the conditions for therapeutic abortion are specified. The French custom is to call a consultation before the abortion is done. He recommends this custom, but is opposed categorically to a law compelling it and especially any obligation to report it to magistrates. Such a law might protect the physician against trouble, but it would cause violation of professional secrecy and disadvantage to the patient.

Herpes Zoster—Marinesco confirms the results of Lipshutz who found it difficult to inoculate the cornea of rabbits with herpes zoster. He classes the disease among the neurotropic epithelioses, and believes the virus is propagated along the nerves. The eruption is not a mere cutaneousrophic lesion, but a localization of the virus.

Organotherapeutic Action of Milk—Cassoute points to the fact that symptoms of cretinism do not develop as long as the infant is nursed, and believes therefore that an important part of the value of unsterilized milk is a combination of the fresh products of all the endocrine glands.

Dec 19 1922 88 No 42

Discussion on Tuberculosis and Pregnancy L. Bernard et al.—p 579
Partial Aphemia in a Case of Nephritis E. Lenoble—p 606
Ulcers of Ileum Meriel—p 613
Photomicrography G. Durante—p 616

Continued Discussion on Tuberculosis and Pregnancy—In his great debate, Bernard shares the view of those who oppose the optimism of Dumarest and Brette. He agrees that pregnancy has a bad influence on tuberculosis, but his statistics show that about half of the tuberculous women survive pregnancy. If a tuberculous woman becomes pregnant, the main question is whether abortion will stop the progress of the tuberculosis. There is no evidence to prove this. Unilateral tuberculosis may be arrested by pneumothorax. Bar explains some points, quotes some cases and draws parallels with similar debates during the last century. He compares abortion in tuberculosis to extirpation of a pregnant uterus for cancer. The change in regard to abortion in management of contracted pelvis has been due to the good results of caesarean section. The end of the present question will be similar.

Ulcers of Ileum—Meriel describes a fatal case of ileus after posterior gastro-enterostomy in a robust man. The operation was performed although there were only indistinct symptoms. The ileus was due to fixation of an ulcer in the lower ileum to the posterior surface of the bladder. The ulcer perforated during the second operation.

Journal de Chirurgie, Paris

November 1922 20 No 5

*Stomach Complications of Diaphragmatic Hernia G. G. Moppert—p 553
Encysted Hematoma of the Spleen Lombard and Dubouché—p 464

Gangrenous Perforation of the Stomach as a Complication of Diaphragmatic Hernia—Moppert reports three cases of diaphragmatic hernia with gastric perforation, which, while

presenting different aspects of the condition, have many points in common and afford sufficient details for a study of the clinical history of this affection.

Encysted Hematoma of the Spleen—Lombard and Dubouché describe in a man, aged 44, who had suffered from malaria, off and on, since childhood, a hematoma of the spleen, which had been enlarged for years. The development of the tumor had not been preceded by traumatism but coincided with a severe attack of the malarial infection. It proved to be an encysted hematoma, but it had no cellular lining on its internal surface, which was formed solely of connective tissue, and indicated inflammatory reaction. The changes in the tissue of the spleen adjoining the cyst proved that the process was old.

December 1922 20, No 6

*Treatment of Tuberculous Spondylitis J. Calvé and M. Galland—p 565
Inguinal Hernia after Appendicectomy Oudard and Jean—p 584

Treatment of Tuberculous Spondylitis—Calvé and Galland applied the Albee implant in 5 men and 3 women, and the Hibbs method in 6 men. The Calvé method of osteosynthesis was applied in 2 other cases. All were adults, and the tuberculous spondylitis had reached the phase of apparent cure. Reexamination from one and a half to three years later revealed that the hump had become more pronounced in two cases, and in 2 others the abscess had returned. In 2 others pains in the roots persisted. Consequently the operation can be considered a success only in 13 cases, and in nearly all of these a celluloid jacket had been worn for two years after the operation. The implant method has proved a failure in children, and it is not needed for well-to-do adults who are not liable to be called on for violent efforts. They should wear a celluloid jacket for life. But for laboring men and women the implant method has advantages, it should be supplemented with the supporting jacket. The 16 cases are reported in detail, 11 cases were repeatedly reexamined with the roentgen rays. The only instance of the Albee operation on a child was done by Albee himself. No supporting jacket was worn, and the implant fractured at the end of eight months. Suppuration then flared up anew and proved fatal.

Presse Médicale, Paris

Dec 9 1922 30, No 98

*Tar Cancer G. Roussy et al.—p 1061
*Transolecranon Operations H. Vuillet—p 1065
*Treatment of Human Anthrax L. Cheinisse—p 1066

Tar Cancer—Roussy, Leroux and Peyre applied tar to 509 mice. They publish their results with illustrations and describe the evolution of the lesions. Metastases were rare and usually affected the lungs.

Transolecranon Operations—Vuillet shows the great advantages of the transolecranon method in the operative treatment of certain injuries of the elbow.

Treatment of Human Anthrax—Cheinisse reviews different methods of treatment of human anthrax as published in different countries. He cites in particular Vaccarezza's favorable experience with protein therapy, summarized in THE JOURNAL, Sept 23, 1922, p 1085. One or two intramuscular injections of 30 cc of a 5 per cent solution of Witte's peptone daily seemed to give good results (677 per cent mortality in fifty-nine cases).

Dec 13, 1922 30, No 99

*Hepatic Insufficiency A. Chauffard—p 1073
*General Endocrine Symptoms A. Szary—p 1075

Hepatic Insufficiency—Chauffard recalls his maxim of 1890. The diagnosis is drawn chiefly from physical signs and the prognosis from chemical signs. He reviews all the signs of hepatic insufficiency, starting with alimentary glycosuria. A very typical behavior of these cases consists in an intermittent excretion of sugar, bilirubin, and methylene blue. The proportion of urea nitrogen to total nitrogen in the urine is normally 0.82 to 0.95. In pathologic cases it is lower, and goes even below 0.50 in phosphorus intoxication. Since this coefficient depends also on the quality of the kidneys, Brodin replaced it by the azotemic coefficient which

is about 0.8. The nonprotein nitrogen in the serum increases in hepatic insufficiency to 0.2 or 0.25. Widal's colloidal test shows an insufficiency of the proteopectic faculty of the liver. Roger showed that the antitoxic action of the liver depends on its glycogenic function. Instead of starving the patient before general anesthesia, it is better to give him carbohydrates for protection against toxic icterus. The different opinions on the genesis of urobilinuria do not diminish the clinical value of this excellent sign of hepatic insufficiency. Besides these general signs there are others of a more special nature, which may become important in the clinical diagnosis. The liver retains considerable amounts of uric acid during digestion of food rich in purins. Cholesterol is excreted by the bile, partly as such and partly in the form of cholic acid. In gallstone disease, the bile contains much cholesterol and little biliary acid. This may explain the precipitation of cholesterol and the formation of stones. The liver is fundamentally an organ which fixes substances which pass through it. The fixation of proteins (proteopexy) is proved, but that of amino-acids is still uncertain. Glycopexy is well known since Claude Bernard's investigations. Adipopexy can be seen histologically and determined clinically. Chromopexy (hemoglobin), toxicopexy and fixation of nontoxic substances (2 mg of methylene blue) by the healthy liver are known. On the contrary, the hepatic barrier is open for substances assimilable directly by the whole body, like amino-acids and cholesterol.

General Endocrine Symptoms—Sezary draws attention to symptoms which may be due to troubles of different glands. These general endocrine symptoms often cause uniglandular affections to be considered as pluriglandular. For instance, the increased tonus of the sympathetic in exophthalmic goiter may lead to a suspicion of increased action of suprarenals and a lowered action of the same glands may be suspected because of the frequent asthenia and pigmentation. Other glands have been also incriminated in exophthalmic goiter. The question is whether the affection of the thyroid alone cannot explain all of these symptoms. The correlated action of the glands is a fact, and there is not sufficient ground to assume a pluriglandular affection. Melanoderma may occur in hepatic insufficiency, exophthalmic goiter, tumors of the pituitary, and affections of ovaries and testicles, without histologic changes in the suprarenals. Asthenia is another general endocrine symptom. Obesity can originate in affections of many glands. Amyotrophy, infantilism, virilism, have various causes. The general endocrine symptoms explain cases of supposed pluriglandular affections without corresponding histologic findings.

Revue de Medecine, Paris

1922 39 No 89

- *Nervous Manifestations in Endocarditis. Claude and Oury—p 449
- Anemia of Pernicious Type of Tuberculous Origin. G Bickel—p 470
- *Thymic Death in Young Woman. A Pulawski—p 495
- Diseases with Neurotropic Virus. H Godlewski—p 500. Cont'n

The Nervous Manifestations in Endocarditis Lenta—At the onset of the malignant endocarditis in the woman aged 25 symptoms of meningitis predominated. Other symptoms suggested irritation of the pyramidal tracts and aphasia was pronounced. The endocarditis was not recognized for several weeks. The diagnosis had been meningitis, and a tuberculous origin had been considered. This case and some others cited confirm the existence of malignant endocarditis with symptoms almost exclusively cerebromeningeal. The negative spinal fluid findings and positive blood cultures give the clue. The diversity of the nervous symptoms is also instructive. Meningeal and pyramidal disturbances are rarely found associated in true meningitis.

Thymic Death in Adult—The woman aged 29 died after an attack of hysteria following a quarrel with her fiancé. She was sleeping calmly at the time and her death seemed inexplicable until necropsy revealed the large thymus (47 gm) and hyperplasia throughout the lymphatic system. This is the second thymic death Pulawski has encountered within two years. In this patient the brain seemed to be too large for the skull.

Archivio di Ostetricia e Ginecologia, Naples

November 1922 16 No 1

- *Cicatricial Atresia of Vagina. S Piccoli—p
- *Glycuronuria in Pregnancy. C Volpe—p 10
- *Placental Grafts. F Spirito—p 2

Cicatricial Atresia of Vagina—Piccoli describes a case of complete cicatricial atresia of the vagina with hematocolpos after a complicated delivery. The plastic operation which relieved the condition is described in detail.

Spontaneous and Induced Glycuronuria in Pregnancy as an Index of Liver Function—Volpe examined fifty-five pregnant women and thirty-nine after delivery for spontaneous excretion of glycuronic acid, and for that induced by injections of camphorated oil. Although absence and diminution of glycuronic acid are not sure signs of liver insufficiency they should be periodically looked for in pregnancy.

Placental Grafts—Spirito repeated Romano's injections of placental emulsions into the peritoneum of rats and used also emulsions of other organs and placentas from other species. Some of the placental and other tissues survived after seven months and appeared to be organized. Heterologous placentas gave almost the same results.

Chirurgia degli Organi di Movimento, Bologna

November 1922 6 No 6

- *Fusion of Atlas with Occipital Bone. M Lupo—p 625
- *Symmetrical Hereditary Osteitis. M Camurati—p 662
- *Treatment of Contracture of Fingers. S Ciaccia—p 666
- Coxa Plana from Tuberculous Osteitis of Neck of Femur. M Camurati—p 685
- *Supracondylar Fracture of Humerus in Children. F Satta—p 689
- Patrogenesis of Talipes Equinus. L Della Valle—p 705

Fusion of Atlas with Occipital Bone—Lupo explains the mechanism of what he calls occipitalization of the atlas. In five of the six cases illustrated the atlas seemed to belong to the skull rather than to the spine. The neck was short and torticollis was frequent.

Hereditary Osteitis—The symmetrical osteitis involved the lower third of the femur and the upper two thirds of the tibia in both legs in a boy aged 7. The disturbances were vague with paroxysmal exacerbations. The father had had a similar affection at the same age but had outgrown it. Other instances were known in four generations—a total of ten cases. The disturbances had always subsided by the age of 20 and the subjects were otherwise healthy. All with one exception were males.

Contracture of the Fingers—Ciaccia reviews the various disturbances from rigidity of the hand and the treatment required. He emphasizes the necessity for combating the circulatory muscular and trophoneurotic changes in and around the joints.

Supracondylar Fracture of the Humerus in Children—Satta's five cases confirm the excellent results from operative treatment in supracondylar fracture with grave dislocation of the epiphysis. The bone must be exposed for reduction and it is best to secure the fragments with a nail. Healing is rapid and complete as is evidenced by the illustrations of the cases.

Policlinico, Rome

Dec 15 1922 29 Surgi Section No 12

- *Nonparasitic Cyst in Liver. O Marguerucci—p 69
- Changes in Intestine Above Stenosis. P Marzani—p 677
- *Ligation of Hepatic Artery in Rabbits. B Iolletini—p 691
- To Insure Continence of Artificial Anus. G Baggio—p 697

Nonparasitic Cyst in Liver—Marguerucci summarizes fifty cases of nonparasitic cystic affections of the liver with operative treatment. In another series of six cases the cyst was discovered at necropsy. He describes with illustration two personal cases. The unilocular cystadenoma contained 8 liters of fluid in one case and was safely removed. It had first attracted attention eight years before. In the other case the myriads of small cysts forming the cystadenoma were all in the right lobe and conditions were more favorable. The patients were women aged 58 and 67.

Ligation of Hepatic Artery—Iolletini relates that five of the six rabbits in which he ligated the hepatic artery survived in apparently good health and the changes in the liver were minimal in the one that died on the third night. There were

signs of degeneration in the liver of those killed later. It is evident that the blood supply of the liver does not suffer materially from a ligature around this one artery.

Continence of Artificial Anus—Baggio compares the different means that have been devised to insure continence. None, he comments, are completely successful. He favors mechanical occlusion which can be removed when the desire is felt. On the cadaver, he has found that passing the stump of the bowel through one buttonhole in the transverse and another in the oblique muscle squeezes the bowel flat by muscular tension when the trunk is erect. The passage gapes and the lumen opens up when these muscles relax as the trunk is bent forward. He has found this operation simple and apparently effectual on the cadaver, but has not tried it on the living subject.

Archivos Latino-Amer de Pediatría, Buenos Aires

November 1922 16, No 11

- *Diabetes in Children P Nobecourt et al—p 705
- *Hydatid Cyst in Child Brain Morquio—p 710
- *Infant Welfare Work Clemente Ferreira—p 720
- *Triplets of Tuberculous Mother M Armand Ugón—p 744
- *Tardy Inherited Syphilis Jose Bonaba—p 748
- Aphasia and Quadriplegia in Child with Typhoid Cavazzuti—p 756
- *Intraperitoneal Infusion in Infants R O Crola—p 761
- Menigeal Syndrome in Hydrocephalus A Segers—p 764
- Cephalic Tetanus in Infant J C Navarro—p 769
- *Typhoid Phlebitis F Pozzo—p 772

Diabetes in Children—Nobecourt, Bidot and Paraf call attention to diabetes in children with arrest of growth. A typical case is described in which the girl, aged 15, looked only 12. The diabetes developed at the age of 13. The child was fairly well nourished, but it was impossible to free the urine from sugar. Loss of weight and general depression followed too strict dietetic measures.

Hydatid Cyst in Brain of Children—In one month Morquio had three cases in his service. The operation proved successful in only one, a boy, aged 6. His total of seven certain cases and three suspects in a few months has confirmed the absence of eosinophilia in echinococcus cyst of the brain.

Report of the Public Health Service—Ferreira, director of the child welfare section for the state of S. Paulo reports the death rate as 43 per cent among the 1,081 infants supervised. The general infant death rate in the city of S. Paulo for the year was 243 per cent.

Triplets of a Tuberculous Mother—The three children are thriving and the mother's general condition has improved since delivery. The triplets were removed at once, and tuberculin tests have been negative.

Tardy Inherited Syphilis—The apparently healthy girl, 9 years old, was in the hospital for treatment of chorea of emotional origin. She recovered, but developed hydrarthrosis of both knees and keratitis. Rapid improvement under specific treatment confirmed the syphilitic origin. The great danger in these tardy cases is that the readily curable lesions may be mistaken for tuberculous affections. A negative Wassermann reaction in children is not decisive. Bonaba cites a case in which the skin, gland, bone and other lesions all melted away under specific treatment after having persisted for nine years. In Laurent and Muller's case forty years elapsed before the true nature of the process was recognized.

Intraperitoneal Infusion—Crola injected physiologic saline or sugar solution into the peritoneum in sixteen infants with alimentary toxicosis. The benefit was prompt and pronounced in ten of the children. The amount was never more than 50 gm at one time, and 100 gm in the twenty-four hours.

Typhoid Phlebitis—The girl, 10 years old, was convalescing from typhoid when phlebitis occurred in the right femoral vein. The leg was put in a splint and the fever subsided in seventeen days. The splint was removed five days later, with complete recovery.

December 1922 16 No. 12

- *Habitual Vomiting in Infants M Acuña—p 785
- *Congenital Ataxia J Orrieco—p 799
- Chenocercosis—A Casarón and A. Peps—p 810

Scurvy in Infant M Armand Ugón—p 815

Herpes Zoster and Varicella M A Guerrero—p 818

Habitual Vomiting in Infants—Acuña relates that five infants with inherited syphilis were promptly cured of incessant vomiting by systematic mercurial treatment. In three other infants there was nothing to indicate an inherited taint, but the habitual vomiting was arrested by mercurial treatment just as promptly and completely as in the other group.

Congenital Ataxia—The ataxia was of the cerebellar spastic type in two boys, 5 years old. It had been noticed at the first attempts to walk.

Brazil-Medico, Rio de Janeiro

Dec 2 1922, 2, No 48

- *Operative Treatment for Ptosis of Eyelid E Campos—p 345
- Flagellates of Human Intestine III A Marques da Cunha and G Pacheco—p 349
- Idem IV Idem—p 357
- *Avidity of Antitoxins R Kraus and Rocha Botelho—p 349
- Brazilian Vegetable Oil in Leprosy Belmuro Valverde—p 353
- Mosquitoes of Celia (Theobald) Species Neiva and Pinto—p 355

Operative Treatment of Ptosis of Eyelid—Campos remarks that the large number of methods for correction of ptosis indicates that none is entirely satisfactory. He found Panas' method disappointing. The Hess method gave excellent results in two congenital cases. The weak point in all methods is that the results are not symmetrical. In one case an attack of supra-orbital neuralgia with transient conjunctivitis in a hysteric young woman had entailed ptosis which persisted for nine years. An operation on the eyelid was followed by complete cure of both ptosis and neuralgia. Campos adds that possibly strapping up the eyelid with adhesive plaster might have proved equally effectual.

Titration of Antitoxins—Kraus reports further research to confirm his statements that the antitoxin acts on the toxin not only in proportion to its quantity but also to its avidity. The latter is a variable quality, and the antitoxins should be titrated for it. He reiterates that Ehrlich was mistaken in his assumption that the preventive and the curative action of an antitoxin necessarily run parallel.

Prensa Medica Argentina, Buenos Aires

Nov 10 1922 9, No 16

- *Leprosy in Argentina M Aberastury—p 447
- Conc n in No 17
- Prophylaxis of Malaria A Bachmann—p 456
- Blastocystis Hominis in Diarrhetic Stools S Mazza—p 460
- *Arcus Juvenilis Esteban Adroque—p 463
- Proposed Changes in Military Medical Service C Trejo—p 466
- Stenosis of Pylorus from Gallstone E Pozzi—p 471

Leprosy in Argentina—This is the report presented at the recent American Leprosy Congress by the official delegate from Argentina.

Arcus Juvenilis—Adroque gives illustrations of two cases. The location and aspect in the eyes of the young man were exactly like those of senile arcus. In the other patient, a girl, aged 13, one eye presented this type, in the other eye there was in addition an embryonal cataract.

Nov 30 1922 9, No 18

- *Gallstone Operations A J Bengolea—p 517
- *Ovarian Tumors in the Pregnant D E Centanaro—p 533
- Methods for Testing Arterial Pressure A Navarro—p 538
- *Treatment of Tuberculous Epididymitis Astraldi—p 541

Gallstone Operations—Bengolea tabulates the details of operation and the results, immediate and remote, in 271 cases of cholelithiasis. In 7 cases a second operation was required for recurrence of symptoms. Gallstones were found in the common bile duct in 2 cases. The mortality as a whole was 4.79 per cent and of 203 cholecystectomy cases, 1.92 per cent.

Ovarian Tumors in Pregnancy—Centanaro analyzes 19 cases of ovarian tumors complicating pregnancy. He agrees that removal of the tumor is the only means to guarantee against interference with delivery. A further argument for prompt removal is the liability to malignant degeneration later.

Conservative Treatment of Tuberculous Epididymitis with Fistula—Astraldi assumes that the epididymitis is of hematogenous origin, and secondary to a tuberculous process in the seminal vesicles or prostate. Hence he severs the vas deferens between two ligatures. Two cases are described.

Archiv für klinische Chirurgie, Berlin

Oct 28 1922 120, No 4

- *Double Nerve Grafting P Manasse—p 665
- *Mammary Cancers in Men A Muller—p 686
- *Traumatic Epithelial Cysts K Blond—p 695
- *Local Changes in Structure of Bone H Maass—p 704
- Origin of Loose Bodies in Joints A Hartwich—p 732
- Regeneration of Bone from Periosteum B Martin—p 744
- Plastic Operation for Flail Knee R Bonn—p 751
- *Perforated Gastric and Duodenal Ulcers J Prader—p 758
- Appendicular Peritonitis E Melchior—p 796
- *Collateral Circulation in Portal System F Walcker—p 819
- Appendicitis and Peritonitis in the Pregnant A Szenes—p 859
- Isolated Luxation of Scaphoid Bone E Just—p 879

Double Nerve Grafting—Manasse expatiates on the ease and good results of implanting both stumps of the injured nerve in an adjacent sound nerve. The sound nerve thus gets the benefit of the nerve fibers that develop between the stumps and bridge the gap. In all of the eight cases in which this *doppelte Nervenproppung* was applied, the radial paralysis was more or less completely corrected. In one case absolutely normal function was regained. The details of the cases are given with illustrations of the technic.

Mammary Cancers in Men—This communication from Eiselsberg's service at Vienna confirms that fully 2 per cent of all mammary cancers occur in men. There were twelve cases in men to 600 in women during the last twenty years at the clinic. Mammary cancers in men seem to be exceptionally malignant, with early metastasis in the spine. If an excised scrap shows cancer, the growth should be removed immediately.

Traumatic Epithelial Cysts—Blond concludes from six cases that these tumors should be called epidermoids when congenital. Several in his group were traumatic epidermoids.

Local Development of Bone—Maass insists that the organic and the mechanical work of the growing bone have to be considered separately. The predisposition to deformity of the bone lies in the muscles rather than in the bone. If the muscles are kept habitually in the fatigue position, pathologic pressure and weight bearing exert a much stronger influence than when the muscles are normal. The bone may yield, regardless of whether it is abnormally soft or not. Even temporary pressure or traction is liable to switch the growth of the bone onto a wrong track. Even a slight injury, entailing merely temporary shriveling or contracture of soft parts, may lead to severe deformity of bone which is completely normal in itself.

Perforated Gastric and Duodenal Ulcer—In the 51 cases analyzed, the 19 perforated duodenal ulcers, and 28 of the 32 perforated gastric ulcers were in men. In 5 cases the perforation occurred in apparent good health, in 5 other cases, during bed rest, in 12 after a brief period of stomach symptoms. The importance of primary suture of the abdominal wall is emphasized by the ultimate outcome. Tampons and gauze induce local retentions liable to entail complications later. Even with profuse escape of stomach and duodenum content into the abdominal cavity healing proceeded smoothly after primary suture in most of Prader's 17 cases. The interval before the operation was less than ten hours in 13 of them. In the one fatal gastric case and the fatal duodenal case the interval had been twenty-one and eighteen hours, respectively. The effusion from the reaction to the perforation is not a peritonitic effusion at first. No bacteria were found in the peritoneal effusion in 4 of the 10 cases examined during the third or fourth hour, and in one case at the twelfth hour. The acidity in these cases was high from 10 to 15. This probably helped to check bacterial proliferation until the reaction veered from acid to alkaline. The acidity, the bacteriologic findings and the length of the interval decide whether primary suture can be ventured.

Collateral Circulation in Portal Vein System—Walcker comments on the great variety of anastomoses.

Klinische Wochenschrift, Berlin

Dec 9 1922 1 No 50

- *Etiology of Goiter A Schwenkenbecher—p 2457
- Death from Goiter F J Lang—p 2461
- *Water Metabolism R Siebeck—p 2464
- Test Glycosuria in Pregnancy Gottschalk and Strecker—p 2467
- *Determination of Bilirubin in Blood A Adler and E Meyer—p 2468

- *Experimental Recurrent Infection A Buschke and H Kroo—p 2470
- *Prophylaxis of Measles E Schilling—p 2471
- Treatment of Blood Poisoning in Anthrax E Baumann—p 2472
- *Simple Acroparesthesia F Heissen—p 2473
- Sun Irradiation at Different Altitudes F Baur—p 2476
- Coagulation of Serum by Heat in Syphilis E Haez—p 2477
- *Non Protein Nitrogen and Toxicoses of Pregnancy Hellmuth—p 2478
- Bilateral Trigeminal Neuralgia Due to Lymphoma of Both Gasserian Ganglions R Henneberg—p 2479
- Treatment of Abortion F Gotting—p 2480
- To Bring Undernourished Children up to Normal Davidohn—p 2485
- Nature of Coagulation of Blood B Stuber—p 2486

Etiology of Goiter—Schwenkenbecher reviews the different theories of the etiology of goiter.

Conditions Leading to Death in Goiter—Lang discusses conditions which may lead to sudden death in persons suffering from goiter. One group is due to the toxic influence on the cardiac nerves. The persistence of the thymus in these cases points to the possibility that the cause of the sudden death may be more complex. Compression of the trachea is more pronounced in deeply or abnormally located goiters than in large ones which can expand freely. Lang discusses the causes for expiratory stenosis in intrathoracic goiter and inspiratory stenosis in goiter of the neck. The function of the nonstriated musculature of the lung is one of the important factors to be considered.

Fundamental Features of Water Metabolism—Siebeck's opinion is that the exchange of water between blood and the tissues depends upon all three components: the blood, the endothelium of the vessels and the tissue. Any explanation which considers only one of these three points is unsatisfactory. The question whether the exchange of water is conditioned by a vital secretion and resorption or simply by diffusion is not stated correctly. There is no question about the existence of diffusion in living bodies, but the point to be studied is the regulation and coordination of this diffusion. Siebeck considered erythrocytes as a good object for such study and found a very constant relation (1/2) of chlorids between erythrocytes and serum. According to Warburg narcotics of the aliphatic series inhibit the diffusion of chlorids from the corpuscles when applied in concentrations in which they inhibit oxidations. Relations to the surface tension were also distinct and Siebeck concludes that diffusion is regulated by the dispersity of protoplasmic surfaces, which can be changed by surface-active substances. Such a physical coordination is not limited to single points but affects the whole organism. The question whether the regulation of water is renal or extrarenal is wrong; both factors are important, and the main point is the coordination of the whole organism.

Alimentary Glycosuria in Pregnancy—Gottschalk and Strecker give to pregnant women 100 gm of levulose by the mouth on an empty stomach. Levulosuria is a probable sign of pregnancy although a negative result does not exclude it. Renal excretion of sugar seems to be more frequent in the early than in the advanced stages of pregnancy.

Elimination of Sources of Error in Determination of Bilirubin in Blood—Adler and Meyer use Thannhauser's modification of van den Bergh's technic but do not evaporate the chloroform from the bilirubin solution. It is sufficient to add alcohol until the chloroform dissolves in it. They use Ostwald's absolute colorimetric method for the determination, and note the color only once with the standard solution. Adsorption of bilirubin to the albumins can be prevented by diluting the serum.

Presence of Spirochetes in Brain in Experimental Recurrent Infection—Buschke and Kroo examined histologically from mice infected with *Spirochaeta recurrentis*. Spirochetes were present in large numbers in the gray matter of the brain between the cells and in the cells of the brain. Spirochetes were never in the ganglion cells nor in the white matter. Spirochetes had invaded the brain in large numbers four hours after the infection, when there were no spirochetes in the blood.

Prophylaxis of Measles—Schilling had previously shown that injections of serum from convalescents were effective in the subject to measles, it is impossible to determine whether nonspecific proteins have

Simple Acroparesthesia—Heissen describes acroparesthesias without visible spasm of the vessels

Nonprotein Nitrogen and Toxicoses of Pregnancy—Hellmuth found, in healthy pregnant women, low nonprotein nitrogen in the blood 0.03 per cent was the highest. Urea nitrogen constitutes about 30 per cent of the total nonprotein nitrogen in pregnancy. Uric acid figures are about the upper normal limit, creatin and creatinin are normal. In eclampsia and nephritis in pregnant women, the total nonprotein nitrogen was maximum normal, while the proportion of urea nitrogen was increased. Uric acid was increased in all of these cases.

Zeitschrift für Geburtshilfe und Gynäk, Stuttgart

Oct. 28, 1922 85, No. 2

Genesis of Intraligamentary Fat Infiltration with Ovarian Dermoid Cysts R. Benda—p. 225

Anatomy of Lower Segment of Uterus H. R. Schmidt—p. 233

Adenomyosis of Female Genitals W. Lahm—p. 292

Origin of Genital Flora R. Salmon—p. 306

The Bladder During Delivery E. Vogt—p. 333

Biologic Changes in Blood During Pregnancy K. v. Oettingen—p. 340

Action of Combination of Organ Extracts on Uterus Kosaka—p. 364

Origin of Genital Flora—Salomon took smears every hour from the mouth of girl babies for ten days after birth. This research was part of an extensive study of the genital flora in women. The findings confirm anew the paramount importance of asepsis in the care of the new-born.

The Bladder During Delivery—Vogt calls attention to the symptoms liable to develop when the bladder is pushed out of place during childbirth. It may be pushed entirely outside of the peritoneum, low down in the pelvis, and here interfere with the dilation of the soft parts. If this impediment to delivery is not recognized and corrected, the bladder or the uterus may rupture from the strain. Two cases are described in detail in which catheterization of the bladder allowed the delivery to proceed smoothly. In two other cases the bladder had been forced into an hour-glass shape. The causes for this extraperitoneal displacement of the bladder may be various, mechanical or pathologic. The obstetrician should be on the lookout for them.

Biologic Reactions in the Blood During Pregnancy—Oettingen remarks that uniform causes are probably responsible for the parallel behavior of the biologic reactions in the blood during pregnancy. We have six biologic tests at our command, speed of sedimentation of the erythrocytes, precipitation and coagulation of the plasma, agglutination of bacteria, action of hemolytic serum, and cobra venom activation.

Zeitschrift für klinische Medizin, Berlin

Nov. 30, 1922, 95, No. 46

Treatment by Inactivation of Protoplasm J. Burmeister—p. 237

Endocrine Obesity A. Loewy and H. Zondek—p. 282

Intraspinal Arsphenamin Treatment A. Wittgenstein—p. 293

Monocytes H. W. Wollenberg—p. 321

Pathogenesis of Typhoid H. Oeller—p. 328

Action of Epinephrin in Blood Diseases A. Hittmair—p. 367

Influence of Carbohydrates on Blood Sugar W. Eliassow—p. 384

Alimentary Glycosuria J. E. Holst—p. 394

Infusions of Glucose in Heart Disease R. Niemeyer—p. 405

Hemoclastic Crisis H. Eisenstadt—p. 414

Uric Acid Determination J. Rother—p. 427

Clinical Import of Stalagmometry F. Breuer—p. 433

Endemic Osteomalacia and Late Rachitis H. Higier—p. 445

Bilirubin in Serum and Bile G. Hetenyi—p. 469

Treatment by Nonspecific Passive Protection or Inactivation of the Protoplasm—Burmeister reviews extensively the field of protein therapy and of calcium therapy. The aim of passive-protection treatment is to suppress the reaction of the body to the toxic agent, because a disease begins only by the reaction of the cells. In such cases, the organism overcomes the infection simply by not taking notice of it. The protoplasm is inactivated against it. It is not yet certain in every instance which drugs activate the protoplasm and which inactivate it. Proteins seem to be activating, heavy metals, calcium, quinin and some dyes inactivate. The symptoms of activation correspond surprisingly to those of exophthalmic goiter, while inactivation is well represented in anæmia.

Endocrine Obesity—Loewy and Zondek found normal metabolism in pituitary obesity. They emphasize the clinical picture of localized obesity (especially in upper or lower extremities) which is in relation to some changes in the endocrine apparatus, but does not present any of the typical pictures. These cases cannot be explained by a lowering of basal metabolism, and thyroid treatment may reduce the whole body except these masses of fat. It looks as if in a certain sense they might lie outside of the general metabolism. These cases resemble Simon's lipodystrophy. One case of obesity had a low excretion of water, which became normal after thyroid treatment.

Endolumbar Treatment with Arsphenamin—Wittgenstein reports her experiences in 300 intraspinal injections of arsphenamin. She never saw a severe or permanent injury from the small doses ($\frac{1}{2}$ mg. to 2 mg.) given in large amounts of cerebrospinal fluid, without undue pressure. Cerebrospinal syphilis and especially lumbar tabes are very sensitive, $\frac{1}{2}$ mg. is a maximal dose and should be given in at least 60 cc of cerebrospinal fluid. Asymptomatic syphilis of the meninges requires from 1 to 18 mg. in 50 or 90 cc of fluid. The patient must be kept strictly in a horizontal position for forty-eight hours after the injection, which is repeated in from three to four weeks. In all cases of clinically asymptomatic syphilis of the meninges, the Wassermann reaction became negative. The reaction should be tested every six months. For recurrences, two more injections are sufficient. The results were better in the combined treatment with intravenous and intraspinal injections than with intravenous injections alone. The method did not give satisfactory results in general paresis. The cerebrospinal fluid should be examined in every case of latent syphilis, and the public should be educated to permit this.

Monocytes—Wollenberg confirms Lucey's observation that the first two blood drops taken from the tip of the ear contain, in many cases, monocytes. Endocarditis lenta leads perhaps to a specific proliferation of the endothelium of all capillaries, especially in the tip of the ear.

Pathogenesis of Typhoid—Oeller does not differentiate strictly between typhoid fever with extensive changes in the lymphatic apparatus and typhoid sepsis. The latter is due to the inability of the cells to fix the virus (a parallel to the leukopenia). If this inability is complete, pure septicæmia results. The hopeless fight is limited in such cases to the blood stream and hemopoietic organs, which act only serologically on the bacteria. New-born children with typhoid infection present sometimes such a state. Streptococcus infections may have points in common with this conception of typhoid. Oeller observed streptococcus and staphylococcus septicæmias which recovered after a transitory pyemic stage (localizations in skin and joints).

Action of Epinephrin in Blood Diseases—Hittmair examined the blood after injections of epinephrin in different diseases of the hemopoietic system. He found no specific changes.

Influence of Carbohydrates on Blood Sugar—Eliassow used 50 gm of glucose and equicaloric amounts of levulose, wheat flour and inulin in twelve sugar-free diabetics, and examined their blood and urine. Glucose increased the glycemia strongly, wheat flour less, levulose markedly less, and inulin not at all. He believes that the slow resorption of inulin accounts for this.

Alimentary Glycosuria—Holst examined the urine of 155 persons, without apparent trouble in carbohydrate metabolism, after an ordinary sweet meal, 19.5 per cent of them became glycosuric. The amount of carbohydrates in the meal was smaller than the amount usually necessary to produce alimentary glycosuria. It would be a mistake to treat these persons as diabetics, but they should be advised to eat less sugar, and to have the urine examined periodically.

Infusion of Glucose in Heart Disease—Niemeyer did not find hypoglycemia in heart trouble more frequently than in healthy people. Arteriosclerotics with a tendency to spastic contractions of vessels do not feel well after infusion of highly concentrated solutions of glucose. Contrary to Budingen, Niemeyer saw no marked therapeutic results from such infusions in heart disease.

Hemoclastic Crisis—Eisenstadt confirms generally Widal's test leukopenia, but believes that in diseases of the liver it represents rather a special instance of an "abdominal vagus reflex" (Glaser). He does not attribute any value to it for the clinical diagnosis of liver disease.

Uric Acid Determination—Rother admits that the Folm-Wu method gives very exact values of uric acid in pure solutions. Yet the coagulated proteins of the blood may retain a considerable quantity of uric acid. There is no known method which will prevent this.

The Stalagmons in Cancer—Breuer used Schemensky's method in sixteen ulcers of the stomach, sixteen carcinomas of the stomach, and eighteen other cases (mostly tumors). Stalagmons are colloidal substances which change the surface tension. They are easily absorbed by animal charcoal and the principle of the method is to determine the surface tension of urine before and after this treatment. The urine is brought to a specific gravity of 1.010 and one portion is used directly and another after acidifying with hydrochloric acid to the point of change of Congo-red. The relation between the number of drops before shaking with charcoal and the number counted after it is the stalagmometric quotient. Breuer's results were very good, but it seemed that the tumor must be of a certain size before an increase of the stalagmometric quotient appears. Nonspecific reactions also occur.

Endemic of Osteoarthropathy, Osteomalacia and Late Rachitis—Higier observed during the second half of 1917, in Warsaw seventy cases of osteomalacia in people between 19 and 56. Lack of vitamin A was the probable cause.

Simultaneous Determination of Bilirubin in Serum and Bile as Efficiency Test for the Liver—Hetenyi determined the bilirubin in blood and bile by Hijman van den Bergh's method. He considers amounts of bilirubin under 6 mg or over 20 mg in 100 cc of bile or over 2.2 mg in blood, as pathologic. Laennec's cirrhosis gave increased amounts in blood, low in bile. Decompensation of the heart gave normal or increased concentration of bilirubin in bile. The liver function is sometimes impaired in the course of pernicious anemia. A number of other diseases were also tested.

Zeitschrift für urologische Chirurgie, Berlin

Oct 7 1922 11, No 12

- *Bilateral Pneumococcus Paranephritis H Hammer—p 1
- *Hypoplastic Kidney with Twin Ureters Opening in Ejaculatory Duct W Reeb—p 6
- *Cystic Enlargement of Lower Ureter F Hubner—p 2
- *Case of Syphilitic Disease of the Bladder P Picker—p 43
- *Congenital Cleft Abdomen G B Gruber—p 51

Bilateral Pneumococcus Paranephritis—Both kidneys were entirely covered with a thick exudate, a phlegmon of the adipose tissue surrounding the kidneys. There had been no symptoms, no fever, although the infection must have been of nearly four months standing. The pneumococcus was cultivated from the paranephritic process.

Cystic Enlargement of Lower Ureter—Hubner has compiled from the literature more than 100 cases of operative treatment of intravesical ureterocele. He discusses the mechanism and the operative technic, with an illustrated description of a personal case. The patient was a woman, aged 28, who had had pains in the right inguinal region since the age of 16. The pain varied in severity but persisted constantly, with occasional colic-like paroxysms. It was relieved by reclining on the right side. The superfluous mucosa was resected after a catheter had been introduced into the ureter and the mouth of the ureter was reconstructed with four stitches. There has been no return of symptoms since.

Syphilitic Disease of the Bladder—Picker's illustrations show the cystoscopic findings in a young man who complained of increased frequency of urination with smarting and itching in the urethra. There was no hematuria but the bladder mucosa was swollen and bluish near one ureter. In the patch were two small necrotic gummas with a small recent one adjoining. Under two months of iodid the cystoscopic findings returned to normal. Picker does not hesitate to advise tentative potassium iodid treatment in large doses for two or three weeks with bladder symptoms which do not fit into the usual frames even when tests for syphilis are negative.

Zentralblatt für Chirurgie, Leipzig

Dec 16 1922 49, No 50

- Treatment of Esophageal Stricture A Henle—p 180
- Plastic Operation to Restore Patella S Kofmann—p 181
- Suturing Following Resections of Portions of Intestine No Covered with Peritoneum F Mandl and M Gari—p 18
- Encapsulated Residual Abscess as Cause of Fistulas After Appendectomy M Cohn—p 188
- Comment on Charrin's No Tampons for Incision Wound Hedri—p 1861
- Idem Wolf—p 1862
- Addendum to Treatment of Cox's Ankylosis E Bircher—p 186

Treatment of Esophageal Strictures—Henle describes his success in treating esophageal strictures. On account of difficulties from kinking in the introduction of rubber tubes into the esophagus Henle had a number of smoothly polished ivory 'olives' made of varying diameter the length varying with the diameter. The olives were strung on a silk cord at intervals of from 10 to 12 cm. A knot tied above and below each olive served to keep it in place. In treating a child aged 3 who had swallowed six months previously a caustic fluid, he introduced two threads into the esophagus, passed one thread to serve in an emergency out through the nose and the other through the mouth. Once or twice daily he attached the string of olives well oiled to the thread passing out of the mouth. The smaller olives were below with the more conical ends downward. Through a gastric fistula, the string of olives was then drawn through the esophagus. As the olives passed the stricture a certain resistance was noted, which served to give an idea as to the position and length of the stricture, and also whether there was more than one stenosis. In the case given there were two strictures 5 cm apart. At first he used olives of from 3 to 7 mm diameter. Then the olives of smaller size were left off and larger ones were added to the string as needed. After the size 11 mm passed through readily longer intervals (two or three days and later two weeks) were allowed to elapse. In the meantime the child had for some time eaten solid food—bread with the crust—without any difficulty. Therefore, the stomach drain and the thread were removed. The treatment was completed before the end of six months. The child continues in good health and has no trouble in eating any kind of food. The gastrostomy which was performed before the case was referred to Henle healed spontaneously.

Zentralblatt für Gynäkologie, Leipzig

Dec 9 1922 46, No 49

- *Etiology of Leukorrhoea R T von Jaschke—p 1938
- *Heart Block and Spontaneous Childbirth W Walz—p 1941
- *Researches on Blood Transfusion L Nurnberger—p 194
- *Rate of Sedimentation of Fibrinogen R Pevny—p 1951
- *Normal Pregnancy Three Years After Operative Reduction of Complete Inversion of Puerperal Uterus K Teutik—p 196
- *Roentgen Irradiation in Gynecologic Hemorrhage Hirsch—p 197
- *Note on Torion of Fallopian Tube J Schwartz—p 199
- *Torion of Health Adnexa in Childhood J Neugebauer—p 1961
- *Zeiss Method of Illuminating Operating Room Hartinger—p 196

Etiology of Leukorrhoea—Jaschke refers to the researches by Manu at Huerlin which go to show that with rare exception leukorrhoea is associated with an abnormal flora. It likewise seems proved that a normal flora of the vagina cannot be preserved unless the vaginal wall remains biologically intact. The glycogen deposits that have been shown to exist in the vaginal epithelium also play an important role since glycogen is doubtless the most important precursor of lactic acid, which produces the normal acid reaction of the vaginal secretion and prevents abnormal bacterial growth. The normal healthy vagina eliminates very soon bacteria that do not belong there. Jaschke's researches show that there is a parallelism between the glycogen content and the lactic acid content on the one hand and the condition of the bacterial flora. A low amount of glycogen and lactic acid was very commonly associated with contamination of the vaginal secretion. There were however many exceptions and inconsistencies so that the subject need to be studied further.

Clinical and Experimental Researches on Blood Transfusion—Nurnberger compared the effect of donor and recipient biologically and hemagglutinated blood made in a special way. The results were given in a table.

blood. Then several minutes were allowed to elapse to see whether or not any manifestations would occur in the recipient. If typical symptoms of transfusion shock appeared (dyspnea, cyanosis, restlessness, a feeling of oppression in the chest, weakening of the pulse, heat flashes over the body, and pain in the back), the transfusion was stopped, but if not, the transfusion was completed. If only hemolysins were present (irrespective whether in the donor's or the recipient's blood), he never observed the slightest disturbance. The presence of hemagglutinins in the donor's blood seldom had any bad effect, but in all cases in which hemagglutinins were found in the recipient's blood, there appeared typical symptoms of transfusion shock. This confirms the findings of various other writers.

Rate of Sedimentation of Erythrocytes as a Diagnostic Aid in Gynecology—Pewny found that the rate of sedimentation could be used only during the later months of pregnancy to differentiate between gestation and myoma, during the first months of pregnancy it cannot be relied on. However, this test will differentiate between benign tumors without complications and malignant tumors, between hemorrhagic and serous tumors of the adnexa, between chronic and acute inflammations of the adnexa and between benign tumors of Douglas' pouch and inflammatory exudate or hematocele. If the blood to be tested has been allowed to stand, the rate of sedimentation will usually be retarded, which fact seems to indicate that, among other factors, colloidal changes play an important part in this test.

Indirect Roentgen-Ray Treatment of Gynecologic Hemorrhage—Hirsch states that, by using 60 per cent of an erythema dose, which was applied to the pituitary gland from two fields, he was able to produce a prompt inhibitive effect on metrorrhagia. He observed no bad effects or disturbances arising from this procedure. No sugar nor albumin appeared in the urine following such irradiation, and no disturbances of function were noted in the vegetative nervous system. In fifteen myomas, which were subjected to this treatment, unusually prompt retrogression occurred, the time was much shorter than had been required to accomplish this by ovarian irradiation. In four weeks the myomas often decreased from the size of a child's head or a fist to the size of a walnut. Immediately after irradiation a distinct swelling of the uterus was frequently noted. In each individual case we must consider whether ovarian or hypophyseal irradiation should be employed. In the case of a growing organism if roentgen-ray treatment of hemorrhage is to be considered at all the pituitary gland, from which so many growth impulses go forth, should be avoided. For hemorrhages at the menopause, whether caused by a myoma or dysfunction of the ovaries, hypophyseal irradiation has special advantages, since the reduction in the function of the pituitary gland accelerates the retrogressive changes in the genitalia. This brings about a condition that corresponds more closely to the menopause than is accomplished by ovarian irradiation.

Dec 16 1922 46 No 50

- Pulvermacher and Torsion of Ovarian Cysts H Sellheim—p 1986
 Chemiobiologic Treatment of Leukorrhea Schweitzer—p 1999
 Etiology and Treatment of Tubal Pregnancy Mauthner—p 2005
 Sex Determination D G Weschink—p 2011
 Neglect of Carcinoma Cases in Germany H Naujoks—p 2012
 Hematoma After Torsion of the Adnexa H Becker—p 2019
 Bacteriologic Indications in Febrile Abortion L Sachs—p 2021

Etiology and Treatment of Tubal Pregnancy—Mauthner does not deny the possible influence of mechanical factors but he doubts whether they are dominant. The biologic factor must be considered. A damaged ovary may produce a pathologic product. The nonpregnant tube should not usually be removed, unless much changed. In the past, 40.5 per cent of all his patients with tubal pregnancy have been

Dec 6, 1922, 65, No 49

- *Width of Bronchioles C Sonne—p 817 Conc n No 50 p 841
 From Mendel to Morgan History of Research on Heredity O Thomsen—p 831 Conc n No 51 p 875

Pathogenesis of Asthma—The extensive experimental and clinical research reported was done to ascertain the relative width of the bronchioles, under different conditions, as a factor in asthma.

Dec 20 1922 65, No 51

- *Radioactive Substances in Soluble Form S Lomholt—p 865 Conc n No 52 p 897

Radioactive Substances in Fluid Form—Lomholt discusses the application of alpha rays in skin disease. In forty-four cases of psoriasis all except one showed more or less favorable influence. Small recurring patches yielded promptly to the treatment. The only drawback is the brownish discoloration that it seems to entail. He used thorium X, dissolved in alcohol, to paint the surface. Actual cure in lupus and psoriasis is rare, but more or less benefit always followed the treatment.

Hygiea, Stockholm

Nov 30 1922 84, No 22

- *Epidemic Encephalitis C Kling—p 913 Conc n
 History of Cancer in Sweden V Djurberg—p 926

Epidemic Encephalitis—Kling was unable to confirm statements as to the identity of herpes virus and the virus of epidemic encephalitis.

Ugeskrift for Læger, Copenhagen

Dec 14 1922 84 No 50

- *Case of Obesity with Arrhythmia E E Faber—p 1741
 Associated Syphilitic Nervous Affections H Vedsmand—p 1744
 Experimental Optic Nystagmus G V T Borries—p 1748
 Blepharitis and Its Treatment H Rønne—p 1752
 Auricular Fibrillation in Hyperthyroidism C Schwensen—p 1756

Obesity with Arrhythmia—Faber's patient was a man 18 cm in height who weighed 146 kg. There were signs of cardiac weakness. Under a course of Carell treatment from 3,000 to 4,000 cc of urine was voided, the weight rapidly declined and the heart action improved. Under quinidin, the arrhythmia subsided but recurred. It finally subsided permanently, two weeks after suspension of the quinidin.

Blepharitis and Its Treatment—Rønne declares that blepharitis is easily recognized and treated, and yet is frequently overlooked. A true hordeolum is a certain sign of blepharitis. The hard dry scab in the eyelashes must be removed. The main thing in treatment is persistence. The salve should be rubbed into the edge of the lids every night on retiring. Blepharitis of many years' standing will yield to systematic scraping off of the scales and application of the salve. If there is ulceration, all eyelashes involved should be pulled out. The fat in the salve is the main thing. Acute exacerbations promptly subside, but chronic blepharitis continues its course until conquered by patience and perseverance.

Auricular Fibrillation in Exophthalmic Goiter—Subsidence of auricular fibrillation after operative treatment of exophthalmic goiter has been reported by Fridericia and others. Schwensen reports a case associated with irregular heart action and auricular fibrillation. The heart beat was 160 the radial pulse 100. After roentgen-ray treatment, the symptoms became much aggravated for five weeks but then improved and the electrocardiogram soon became entirely normal. The right ventricle returned to normal size at the same time.

Dec 21 1922 84, No 51

- *Splenectomy in Pernicious Anemia E Holm—p 1781

Splenectomy in Pernicious Anemia—Holm says that the benefit from splenectomy in pernicious anemia was remarkable. The blood count after 85 days resembled that of a normal person.

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THE RESOURCEFUL GENERAL PRACTITIONER OF MODERN MEDICINE*

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The time has come for plain statements in regard to modern medical practice, with the purpose of bringing the public and the members of the medical profession as a whole back to good common sense views. It is my purpose to attempt to show how the general practitioner may continue to occupy the important place in the field of practice which was his until recently. For the time being, therefore, specialists in medicine and surgery and special forms of the prevailing methods of modern practice, such as diagnostic groups and pay clinics, will not be discussed.

In a consideration of the general practitioner it will be necessary to discuss the opportunities which he enjoys, and the problems and difficulties which beset him. In their work, not all general practitioners are resourceful and sure of themselves. This fault is due in some instances to inadequate early training, but in a majority of men it is due to laziness and failure to take advantage of the opportunities afforded all physicians. From the time of his graduation until he retires from work, the whole professional life of the physician affords opportunities to study morbid processes as evidenced by anatomic changes and altered function and so to manage and treat the patient that partial or complete restoration occurs—dependent, in part, on the nature of the malady. The physician who makes all possible use of his daily clinical opportunities learns something new and useful every remaining day of his professional life.

The determination to take advantage of the daily clinical opportunities and of other educational available aids are the essential factors which produce resourcefulness and ability in the physician. Naturally, this daily clinical study develops the powers of observation and manual dexterity in physical examination and in treatment. The knowledge which this ever increasing experience affords is refined and stabilized by purposeful reading of standard textbooks and periodicals, by association with fellow practitioners and in discussion of papers read before medical societies, and by writing papers on subjects which the physician's daily clinical observations justify.

Something additional must be said of the educational aids available to physicians in most communities. Although medical books and periodicals are relatively expensive, most physicians can afford standard textbooks on physical diagnosis, practice of medicine, gen-

eral surgery, obstetrics, pediatrics, dermatology, neurology and on other special subjects which they feel are necessary, and one or two good general medical periodicals, which should include THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. The daily clinical observations fortified by selective reading in standard textbooks and good medical journals afford a method of self-education of the greatest value.

Membership in and active participation in the work of the county medical society is of great educational benefit to the physician. It affords personal contact with fellow practitioners in the courteous discussion of medical subjects and professional problems, promotes mutual respect and good will, and is a potent factor conducive to increased self-respect and self-reliance on the one hand, and to a decrease in the size of the hat, if imaginary megalomania makes one a nuisance to his fellows.

Concise written reports of interesting clinical observations presented before medical societies and for publication are a splendid means of self-education, and are justified because they furnish a valuable addition to medical literature. In this connection it will be recalled that some of the best and earliest clinical descriptions of epidemic cerebrospinal meningitis, infantile paralysis and other epidemic diseases prevailing in the United States were written by the rural general practitioners, and in some instances in pioneer sections of the country.

DIAGNOSIS

Diagnosis is the most important factor in the practice of medicine. Until the diagnosis is made, treatment may be ineffectual and often is irrational. Modern medical science is characterized by the development of many laboratory and instrumental methods of diagnosis. Concerning these I repeat what has been said on several occasions. With due regard for the value and need of all the splendid ultrascientific laboratory and instrumental methods of physical and functional diagnosis in investigatory medical work, they are needed in the routine clinical care of not to exceed 20 per cent of all the patients of any urban or rural community. Unfortunately, many lay people have been made to believe and apparently a large number of physicians think that the routine application of the ultrascientific methods of diagnosis is necessary in the majority of cases. The fact is that the diagnosis can be made in fully 80 per cent of all cases by a resourceful general practitioner who will efficiently use his brain, special senses, hands and an always available simple and inexpensive laboratory and instrumental equipment. In a discussion of the means of diagnosis available to the general practitioner, the history of the past and present condition of the patient is one of the most important, if not the most essential, factor.

MEDICAL HISTORY

To obtain a satisfactory medical history is an art which can be perfected by painstaking care and experience. The difficulties encountered in garrulous, taciturn, conceited, opinionated and stupid patients can usually be overcome by patience and tact. In most instances the patient can be encouraged to tell a rational story of the main symptoms of the complaint. The physician should be careful not to misdirect the story of the patient by questions which may encourage indicated replies, but should guide the patient in his story to an orderly recitation of symptoms referring to the most important complaints. If the symptoms refer to the gastro-intestinal tract, the quiz should be confined to this subject until all necessary information is obtained, before proceeding to any other system of the body. This orderly method of procedure impresses the patient with the importance of accuracy of statement, and if each system of the body is taken up in turn and completed, the information obtained will be amplified, will be of greater value, and in the end will save time. In addition to the symptoms of the present disease, in chronic conditions, especially, it is very important to obtain accurate information of former diseases because of the possibility of a relationship to the present condition. It is also important to learn the habits of the patient in regard to food, drink, sleep, work, recreation and the habitual use of tobacco, alcohol and drugs. If insufficient training and lack of experience at the beginning of the professional career prevents the physician from obtaining from the patient all the information available, this will be overcome by taking advantage of the daily experience in clinical observation, selective reading, attendance on society meetings, and other methods of professional advancement. A majority of practitioners do not make written records of their patients; these are absolutely essential to accuracy in diagnosis and efficiency in practice. To obtain an efficient history and make a written record require time. Many practitioners have told me they could not afford the time to do this. My own experience justifies the statement that this is a mistake. Accurately written records, brief though they be, properly filed to be available for future reference, are time-savers of the future weeks, months and years. As written records of patients accumulate and are properly filed to be available, the practitioner possesses information which attaches patients and their families to him and affords him time-saving data of inestimable value in the future care of patients and as material for medical reports and papers to be presented to medical societies or for publication.

PHYSICAL EXAMINATION

The conscientious practitioner will make a careful, general physical examination of practically all patients who seek his services. An occasional patient with a slight ailment, and especially those with slight injuries or lesions requiring surgical treatment, are exceptions. But with many patients the present complaint is often an expression of an older morbid process which has been disregarded by the patient or overlooked by the physician. The physical examination must be made methodically. I need not mention what should be learned by inspection, palpation and auscultation. If each is used carefully, and if the results recorded to insure accuracy are considered with the findings of the available simple laboratory and other tests, these valuable positive and negative data will enable the physician

to make a probable diagnosis. In some instances, further examinations may be necessary to reach a true diagnosis. Here, again, the daily opportunity in clinical and laboratory examinations, and the correlation of the findings affords an experience which will insure steady improvement in technical skill and in judgment. Daily practice in technic and judgment is the program which every physician must follow to become a skilled diagnostician. The practitioner can gain much by observing others at work in organized clinics or by taking postgraduate courses in diagnosis, when these are available, but the efficiency of the practitioner in diagnosis is mainly dependent on his own industry and determination to make the most of his own clinical opportunities.

SPECIAL EXAMINATIONS

The general practitioner cannot be proficient in the more refined methods of examination which are necessary in the practice of the specialties of medicine and surgery. But he can and should be able to recognize the more common diseases of the eye, ear, pharynx, accessory nasal sinuses, locomotor apparatus, rectum and female pelvic organs with the simple available means at hand; furthermore, he should possess and use in routine practice a simple chemical equipment and standardized urinometer for urinalysis, a microscope, blood counter, hemoglobinometer, rectal, aural and vaginal specula, laryngeal mirrors, head mirror, blood pressure instrument, stethoscope, stomach tube, and an inexpensive electric light device, with storage battery, if this is needed, is now available for transillumination of the accessory nasal sinuses, jaws and other tissues. Daily use of these instruments will develop technical skill and make them valuable aids in diagnosis.

There is a growing custom in urban practice for general practitioners to have the routine laboratory examinations, such as urinalysis, blood estimations and other simple tests, made and the results interpreted for them at the numerous available commercial laboratories. In my opinion this is a great fault in practice, it would be quite as rational for the practitioner to depend on available organized clinics for the physical examinations and diagnosis of patients.

For the few patients who require laboratory or instrumental tests which involve special knowledge and technical skill in their application, such as blood chemistry, serology, bacterial cultures, elaborate blood counts, electrocardiography, efficient roentgenology and the like, the practitioner should make use of the excellent commercial laboratories, public clinics and available state, county and municipal public health laboratories.

PHYSIOLOGY AND MODERN MEDICINE

Modern medicine is still engaged with the importance of the morbid anatomic lesion as to its etiology, nature, evolution and its modifications by management and treatment. But, today, we have quite as great a concern in the coincident functional disorder. That is, a study of pathologic physiology is recognized as of great importance in the practice of medicine. Therefore, the interest in pathologic physiology has resulted in the elaboration of laboratory and instrumental functional tests in diagnosis which require such great technical skill and experience in their application that they are valueless to the general practitioner. Fortunately, these refinements in functional diagnosis are not needed in more than 20 per cent of the patients of any community. Unfortunately, the clinicians and laboratory workers who have devised these tests and

instruments have not indicated how some of the ultra-scientific functional tests may be modified to make them utilisable by the general practitioner. It is my privilege to attempt to describe how the physician may use available simple methods to ascertain the approximate function of some morbid anatomic conditions.

CHRONIC NEPHRITIS

As a rule, the general practitioner has the opportunity to see patients in the early stage of disease. At any rate, most patients with chronic disease seek aid comparatively early. Therefore, the general practitioner will have an opportunity to test out the function of organs with manifest morbid anatomic changes before severe constitutional symptoms develop.

When the practitioner finds albumin and casts in the patient's urine, he is justified in making a diagnosis of nephritis. But he must understand that chronic nephritis is often associated, soon or late, with morbid cardiovascular changes, varying degrees of edema of the soft tissues, dyspnea on exertion, and other symptoms and signs indicative of constitutional disturbance.

To appreciate and comprehend the relationship between nephritis and the morbid tissue changes in other portions of the body, I would recommend that the general practitioner adopt the excellent clinical classification of nephritis made by Dr. Henry A. Christian of Harvard, which is as follows:

- 1 Acute nephritis
- 2 Chronic nephritis
 - (a) With edema
 - (b) With vascular hypertension
 - (c) Mixed or combined type
- 3 Essential vascular hypertension progressing to chronic nephritis
- 4 Renal arteriosclerosis progressing into chronic nephritis

This is not a formidable and incomprehensible classification such as prevails in the literature, but is a good working basis for every-day practice.

Now, the general practitioner is likely to discover evidence of nephritis in his patients before the constitutional disturbances appear. However, he should know that constitutional evidences of the body changes associated with chronic nephritis may be present, and should make a thorough physical examination, which will include the blood pressure, the condition of the heart, the presence or absence of edema in the soft tissues, and the presence or absence of dyspnea on exertion.

He should avail himself of a simple means of testing the function of the kidneys. The kidney excretes water, salts, and nitrogenous and other elements. The epithelial cells lining the kidney tubules possess the special function to resorb the threshold elements, such as sodium chlorid, from the water which reaches the tubules from the blood passing through the glomeruli. Were it not for this important function of the kidney, the blood and other body fluids would be deprived of the necessary amount of these threshold substances to maintain their chemical and physical equilibrium, which would be disastrous to life.

The general practitioner can test with approximate accuracy the ability of the kidney to excrete water and salines by the following simple method:

For a patient living in the ordinary routine, the urine of the night is collected for a period of twelve hours, is measured, and the specific gravity is taken and noted. At noon the patient is given a liberal mixed meal containing meat and other albumins, and a liberal amount of common salt as a condiment. Following the meal, the urine is collected in a

separate receptacle every hour for four or five hours, is measured, and the specific gravity of each specimen is noted. On the second day, in the morning while fasting, the patient drinks three or four pints of pure water. Then for five hours the urine is collected in a separate receptacle every hour measured, and the specific gravity of each specimen is taken and noted.

These tests afford the following information. The ability of the kidney to excrete water, which is evidenced by the increase of the water output during the fasting period when the patient is drinking water freely, as compared with the bulk of urine passed during the night and that excreted after the hearty meal. The ability of the kidney to concentrate and excrete salines, which is evidenced by a specific gravity of higher degree of the specimens of urine voided after the hearty meal, when compared with the specific gravity of the night urine and of the specimens voided while taking water freely. The ability of the kidneys to concentrate and excrete salts indicates a fairly good function in the excretion of nitrogenous waste and other poisons. The tests will show a very good function of the kidney when the urine is notably increased by water drinking, and when the specific gravity of the urine taken after the hearty meal is comparatively high. The reverse of these findings would indicate poor or very bad function. These tests will be of the greatest value in those patients who show little or no constitutional disturbance. A patient who is suffering from anasarca would be unsuitable for these tests because, no matter what the cause of the dropsy, the power of the kidney to excrete water would probably be poor.

The utility of the test depends on its use in the early stage of nephritis. When so used, the information given will enable the practitioner to give a rational prognosis, and to apply appropriate management and treatment.

For those patients who show very poor function of the kidneys, the conscientious practitioner will desire to apply more refined functional tests of the kidneys. If his patient is financially able, he can be sent where blood chemistry and other tests may be applied. For the poor who are unable to pay for the transportation necessary to reach these centers, there is at present no usual means to afford them this important service. Later I shall mention what should be furnished each community to make available to the practitioner the refinements in diagnosis and in treatment which a few patients require.

Lack of time and space prevents a consideration of the various types of nephritis, their recognition and the indicated management and treatment. The subject is important, but would require more time than is allotted for its consideration alone. However, if the practitioner has the ambition and the energy to perfect himself in a knowledge of nephritis, he may turn himself of the excellent literature of recent periods, and especially of the reports of Dr. Henry A. Christian and his co-workers in the Peter Bent Brigham Hospital at Boston.

HEART DISEASE

The condition of the myocardium and the ability of the heart muscle to function is a question of far greater importance to the patient and to the general practitioner than the anatomic diagnosis. As long as the myocardium has the ability to function anywhere near normally, the patient's health, as far as the heart is concerned, is usually fairly good, and there is no immediate

jeopardy to life. It is true that degenerative changes in the myocardium are caused by or are hastened by certain morbid anatomic lesions. For example, mitral stenosis interferes mechanically with the passage of blood through the heart, causing overwork, dilatation of the left auricle, and comparatively rapid myocardial changes.

In heart conditions the practitioner should avail himself of every available simple means to acquaint himself with the anatomic condition of the heart, that is, its size, the presence or absence of murmurs, and its rhythm, and at the same time should note by careful physical examination the presence or absence of other morbid conditions of the body. For example, he may find toxic goiter, chronic nephritis, neurosis associated with neurasthenia, and other constitutional disturbances which cause heart symptoms.

To test the functions of the heart, he should have the patient exercise for short periods of a minute or less, with a rest period following, by hopping on one foot for fifty to a hundred times, by walking or running for twenty-five or fifty yards, by climbing stairs, or by calisthenic exercise of any kind. Before, during and after the exercise, the rapidity, rhythm of the heart action and the number per minute of the radial pulse should be noted, the presence or absence of undue dyspnea, the presence or absence of actual pain in the heart region, and changes in the color of the skin. If a patient is able to take these exercises without great objective disturbance of the heart, which would include a return of the number per minute of normal heart beats or the number before exercise, within one minute after the cessation of any one form of exercise, the manifest anatomic diagnosis is unassociated with any serious damage to the myocardium. On the other hand, if the pulse remains rapid after exercise for three or four minutes, if the patient has an undue dyspnea on exertion and there is evident precordial pain and disturbance of the circulation of the skin, the myocardium is damaged and requires rational management and treatment.

In 1918 while in England, I visited the heart military camp at Colchester which was under the direction of Sir Thomas Lewis. The patients in the camp were soldiers on furlough with disability due to alleged heart disease. As you are aware, Sir Thomas Lewis has been one of the most efficient investigators of the normal and pathologic physiology of the heart and of its diseases. In this work of investigation he utilized the electrocardiograph and the polygraph. At this heart camp I was gratified to find that he did not maintain a laboratory with these instruments of precision which he used in his investigatory work, but relied entirely on the simple available means of diagnosis which are possessed by every practitioner of medicine. After making a complete physical examination of each patient to ascertain the presence or absence of other constitutional disturbances, he noted the presence or absence of heart murmurs, the presence or absence of hypertrophy, and then tested the function of the heart by the means I have outlined. By these measures he was able to make an accurate estimate of the heart condition of the soldiers, and a majority of them were returned to active duty in the field.

The general practitioner can learn to do this himself, furthermore, if he will follow this method of practice he will be able to allay the anxiety of many of these patients by giving a rational prognosis based on the

ability of the heart to function. For those patients with heart lesions who present evidences of poor function, he will apply the appropriate treatment, referring those who require greater knowledge and technical skill than he possesses to qualified colleagues. Time and space do not permit a discussion of the treatment of the failing heart. I will recommend that the general practitioner secure and read *Clinical Diseases of the Heart*, by Sir Thomas Lewis, and also *Diseases of the Heart*, by Sir James Mackenzie.

DISEASES OF THE LUNG

There is no short and easy road to the accurate diagnosis of diseases of the lung. Of these, tuberculosis is one which requires acquired skill in the application of physical diagnosis with the experience which comes from daily practice. But the physician who applies himself earnestly to physical examination of the lungs will qualify himself to recognize the evidences of pulmonary tuberculosis. The failure to recognize the disease is due to the neglect thoroughly to examine a majority of patients. Too often the patient is subjected to the expense of a roentgen-ray examination of the chest which does not reveal, as a rule, morbid changes which cannot be detected by ordinary available means of physical diagnosis. As a refinement and to satisfy one's curiosity to know whether the physical findings discovered are correctly interpreted, a roentgenogram or a fluoroscopic examination may be made of the chest. It is important to examine the sputums for tubercle bacilli, and this knowledge is available to the practitioner through existing laboratories if he is not able to make the examination of the sputum himself.

DISEASES OF THE STOMACH

The technic of using the stomach tube efficiently is easily acquired, and the general practitioner should utilize this useful aid to diagnosis. By means of this instrument he will be able usually to verify the diagnosis of ulcer of the stomach or anatomic obstruction of the pylorus due to any cause, and its use will afford satisfaction. If a hearty meal is given at bedtime and the stomach tube reveals food in the stomach in the morning, it is a sure index of organic pyloric obstruction. With diseases of the stomach, as in other conditions, one must obtain a satisfactory history from the patient and make a general examination. It must be remembered constantly that gastric symptoms, particularly those ascribed to peptic ulcer, are often caused reflexly by chronic appendicitis, less frequently by gallbladder disease, and by morbid lesions of other abdominal and pelvic organs.

Carcinoma of the stomach, especially in its early stages, is more difficult of diagnosis, but the associated poor appetite, lessened strength and endurance, the incidence of pain immediately or shortly after taking food, the frequent nausea and occasional vomiting, and the low acidity of the gastric juice should make the practitioner awake to the possibility of cancer. In my opinion, in these patients, early exploration by the surgeon is justifiable with the hope that the disease, if found, may be wholly eradicated.

CHOLECYSTITIS

Cholecystitis, with or without gallstones, is of frequent occurrence in medical practice. The condition occurs with gallstones in persons past the meridian of life more frequently than in younger individuals. Frequently the disease is latent, but even here is apt to

cause functional disturbance of the digestive organs. In the absence of other symptoms pointing to intrinsic disease of the stomach, these symptoms should arouse the suspicion in the mind of the practitioner that his patient has gallbladder disease. Pain in calculous cholecystitis is rather characteristic in the fact that it is often agonizing in character and is often associated with pain at the spine of the right scapula, and in some patients it radiates to the mediastinum, and the heart is disturbed. Attacks of gallstone colic are sometimes precipitated by mental emotion, by lifting heavy weights or by riding over rough roads, and sometimes it is brought on by an overloaded stomach. When the gallstone reaches the common duct, the pain is usually aggravated, as compared with that of cystic duct stone, and jaundice usually supervenes and confirms the diagnosis. Cholecystitis, of a latent character even, is associated with tenderness of the gallbladder. This may be elicited with the patient in a supine position by percussion over the gallbladder region while the patient takes a full inspiration and maintains it for a moment. This percussion is best accomplished by placing the points of the fingers of the left hand flexed at the middle joint over the gallbladder region and striking them a sharp blow with the right hand.

APPENDICITIS

Acute appendicitis in the primary attack is practically always sudden in its onset, and is associated with a reflex nervous disturbance often manifested by nausea and vomiting, and there is usually irritation of the peritoneum, manifested by rigidity of the abdominal muscles, and tenderness over the appendix region, and there is always constitutional disturbance manifested by rise of temperature, quickened heart beat and general discomfort. In such primary attacks the disease should be treated surgically and at once. In chronic appendicitis the clinical history will usually reveal former attacks, and quite as frequently there will be associated disturbance of the stomach often simulating peptic ulcer. In my opinion, recurring appendicitis does not require the immediate surgical emergency of the primary form of the disease. But the practitioner who fails to have the patient with chronic appendicitis operated on soon or late, and especially soon, is not conscious of his responsibility to his patient.

PERNICIOUS ANEMIA

We do not know the cause of pernicious anemia. The condition is associated with morbid anatomic changes in the alimentary tract, the bone marrow, the spleen and other blood-making organs. A general examination reveals a marked anemia with deformed red blood cells, some of which are very large and others much smaller than the normal. Much is made of the usual relative percentage predominance of the hemoglobin over the percentage of red blood cells, which is expressed by a so-called plus color index. With many physicians, the diagnosis is chiefly based on the blood examination. Now, the fact is that every true case of pernicious anemia presents physical evidences which are so characteristic that the diagnosis may be made on this evidence alone when they are recognized. These consist of a smooth tongue partly or wholly denuded of its epithelium, which shows evidences of irritation amounting in some regions of the organ to inflammation, and is accompanied by burning, smarting and other discomfort. There is practically always an achylia gastrica, evidenced by the absence of acid in

the gastric juice, frequent disturbances of the bowel, characterized by diarrhea, with alkaline liquid stools containing protozoa, and the pallor of the skin is characterized by a yellowish tint. The patient always presents more or less evidence of parasthesia in the form of numbness and tingling to the fingers, hands, toes and feet and sometimes extending to the proximal limbs. The practitioner is justified, therefore, in making a diagnosis of pernicious anemia when the patient presents these conditions, even if he is not able to make a thorough blood examination.

The importance of the recognition of pernicious anemia is to avoid unnecessary and expensive treatment. Under ordinary good rational management with attention paid to the diet, the avoidance of fatigue and other hygienic measures, the patient's life will be conserved as a rule, quite as long as if he submitted to all of the modern measures practiced, including splenectomy and blood transfusion. I make this statement advisedly based on an experience with more than two hundred patients suffering from pernicious anemia who died in spite of the application in some of them of these alleged curative forms of treatment. Time and space do not permit a discussion of other types of anemia.

ACUTE DISEASES

The problems which confront the general practitioner in the diagnosis of the acute diseases are many, but are less difficult to solve than those which are presented by many of the chronic diseases.

In these conditions he will not usually distress a patient suffering from an acute disease in an attempt to secure an exhaustive history of his family or of the habits and other data so important in the recognition of chronic diseases. Here, with the patient in bed, time may be taken, even over a period of two or three days, to make observations to insure the proper diagnosis, provided, of course, that in the contagious diseases or when one suspects or apprehends a contagious condition, the other members of the family and the community will be safeguarded by proper preventive measures. In suspected diphtheria, antitoxin will be used because it is known that the earlier the specific remedy is applied, the more likely is the life of the patient saved. The subject of the diagnosis of acute diseases is too large to enter on here. The progressive practitioner will keep himself informed of all the newer available and especially the simple methods of diagnosis, and will utilize the available commercial, clinical, state, county and municipal laboratories for the bacteriologic and serologic specific tests which are often necessary in the diagnosis of cases of acute disease. Time and space will not permit a broader discussion of diagnostic problems which are difficult of solution.

ECONOMIC CONSIDERATIONS

I am very mindful of the economic difficulties which embarrass many medical practitioners. The rural practitioner is subjected to physical and mental fatigue from long hours of work, often with insufficient sleep, and exposure to inclement weather, and frequently is inadequately paid for his services. In consequence, he is disinclined to use thorough, painstaking methods of diagnosis, becomes careless, is apt to avoid medical society meetings, and reads medical literature with but little interest. Of course, there are many exceptions.

In the city the general practitioner meets a comparatively larger number of poor patients than are found in rural

sibility of collecting an adequate fee from many poor patients begets in many city practitioners the habit of superficial methods of practice. Then, too, competition is usually great in the city, and it is probable that the average general practitioner of the city has a smaller annual income than his rural medical brother. But the city physician has opportunities for professional advancement, if he will take advantage of them, by attendance on public clinics and medical society meetings, and by reading good medical literature in accessible libraries.

But whether one is a practitioner in the city or in the country, the economic conditions peculiar to each can be greatly improved by one's own efforts. The fundamental principle which each practitioner must adopt to overcome his economic embarrassment is to improve himself professionally. To accomplish this, I believe he must steadily follow the methods of clinical practice and other self-educational opportunities which I have outlined. I sincerely believe that if he will do this, he will attract to himself a large number of patients, will receive more adequate financial reward, and will find real enjoyment in his work.

Many years ago an observing philosopher said, "The pathway to the door of the qualified man, desirous of giving honest, efficient service to the public, is worn smooth by the passage of many feet."

I believe that the preservation of the general practitioner, as the most important factor in the field of practice, is dependent, chiefly on himself. He must keep abreast of the advance of modern medical knowledge and practice, chiefly by his own efforts. If he strives to improve and help himself he will be successful, will justify his importance in the medical field, and will attract the ill and injured to his door because of his professional individual superiority as compared with men in narrower fields of practice, alone or in public or private groups.

FACILITIES NEEDED BY GENERAL PRACTITIONERS

Many general practitioners of the city lack hospital facilities for the small percentage of their patients who require hospital care. For the small number of his patients who require blood chemistry, electrocardiography and other technical refined tests, he can avail himself of the services of commercial clinical laboratories and those conducted by public and private clinics.

The practitioner in most rural communities lacks both the hospital and available laboratory facilities for the refined physical and functional diagnostic tests which his practice demands for 10 or 15 per cent of his patients.

The necessity for the preservation of the general practitioner in the city and in rural districts, for the general public good, justifies and demands that the organized medical profession should assume leadership in educating the public to understand and comprehend the need of hospital centers including diagnostic facilities in every community financially capable of self-support.

Perhaps this much to be desired improvement of the facilities for general practice is unattainable in most communities for the reason that the medical profession as a whole does not accept its responsibility, and without the leadership of the medical profession the public will remain ignorant of its own welfare needs and will not act.

There is another possible solution of the problem which may afford the general practitioner the support

and facilities he requires to furnish all of his patients efficient service.

PRIVATE GROUP PRACTICE

Private group practice is a modern development. If the specialists in surgery, internal medicine and the narrower fields of medicine and surgery and the laboratory experts who form the group are men of broad minds, unselfish, sympathetic and desirous of giving efficient service to the community, including the members of the medical profession not connected with the group, they could furnish a great need in city and rural practice. From 15 to 20 per cent of the sick in a community require their specialized service in diagnosis and treatment, but they would and should act only as diagnostic consultants and advisers of treatment of patients sent by the general practitioner for these purposes only. An unselfish policy of this kind would justify private group practice, and would be a material professional assistance to the general practitioner and a great benefit to the community. On the other hand, the adoption of a selfish policy by the private group which would disregard and ignore the professional and economic welfare of the general practitioner will result in injustice to the public and disaster to the private practitioner and to the group itself.

The American family home has been and must continue to be the very foundation of this nation. Bolshevistic socialism, anarchy and public discord cannot exist in a nation of family homes. The integrity and perpetuation of this nation is dependent chiefly on the maintenance of family life, and the continuance of the family home demands the preservation of the family physician, the general practitioner.

1550 North State Parkway

SUCTION IN THE TREATMENT OF LARYNGEAL DIPHTHERIA¹

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With the introduction of intravenous antitoxin, direct laryngoscopy with swabbing of the larynx, and finally suction, the mortality figures in laryngeal diphtheria have gradually decreased.

HISTORY OF THE RELIEF OF THIS DISEASE

The earliest records of catheterization of the larynx, for cases of inflammatory stenosis, is found in the writings of Hippocrates. Cannulas were carried into the throat along the jaws so that air might be drawn into the lungs. This procedure was practiced until the discovery of tracheotomy by Aschopiadon in the first century B. C. Catheterization was lost sight of until 1780, when it was revived by Chaussier, who proposed the use of a laryngeal tube in the asphyxia of the new-born and to overcome obstruction due to disease.

Dissault, in 1801 and many others after him appear to have had some measure of success in the treatment of laryngeal stenosis by this method, particularly in adults, but the retention of one end of the tube in the trachea while the other protrudes either from the mouth or from the nose is obviously impracticable in children.

¹ A preliminary report from the group service at Willard Parker Hospital.

THE RÔLE OF INTUBATION

The first to advocate the treatment of laryngeal obstruction by intubation was Bouchut, in 1858, and it was he who demonstrated that the larynx will tolerate a tube. The profession of Paris condemned and even ridiculed the new method and said it could only rarely supplant tracheotomy, which was used to relieve obstruction of the larynx until 1885, when O'Dwyer first introduced suitable instruments for intubation. Beginning with a tube like a bivalve speculum, he experimented for a number of years, until his well known tubes were perfected. Considerable modifica-

TABLE 1—COMPARISON WITH THE RESULTS OF PREVIOUS YEARS

	May 1921	December 1922
Total cases of laryngeal diphtheria	158	106
No local treatment—mild cases	43	21
Applicator treatment	11	12
Applicator and intubation	18	0
Intubation	84	18
Suction	0	46
Suction and intubation	0	9
Total deaths	41	14
Mortality	25—%	13+ %

tions have been made since, and shortly before his death Lynch devised the non-cough-up tube.

While intubation has saved many lives in diphtheria and other diseases affecting the larynx, Thomson¹ emphasized the disadvantages of intubation and stressed the value of avoiding it when possible. The tube, no matter how carefully introduced, may cause slight injuries to the larynx. A bronchopneumonia may follow, or a chronic stenosis of the larynx, requiring the prolonged use of an indwelling tube with its attending dangers, is not an infrequent result. The chronic stenosis may be due to ulceration brought about by retention of secretion and stenosis from tube decubitus.

OBVIATING INTUBATION

Loosened diphtheric membrane is frequently the cause of obstruction to the breathing, and the removal of this membrane is desired. O'Dwyer himself recognized this, for he wrote, "I have devised and tried several instruments for the removal of pseudomembrane from the trachea, but they have not proved satisfactory."

Drug therapy had failed to eliminate the membrane, and not until the introduction of the antitoxin intravenously was the rapid formation of the membrane somewhat checked. With this method of administration of the antitoxin a good number of the patients that require intubation need it after the first twenty-four hours. While this eliminates some of the cases, others still remain which require intubation.

In taking cultures directly from the larynx, Thomson and others at this hospital noted that the dyspnea was caused either by loose membrane drawn into the lumen of the larynx on inspiration, or by a thick, mucopurulent material, which the patient seemed unable to cough up. In only a small number of cases was the dyspnea due to the attached membrane above or to an inflammatory stenosis. We noticed that this loose membrane came away frequently on the swab, and the cough following the swabbing cleared the mucus away, so that a child ready for intubation fre-

quently had immediate relief. By this method Thomson reduced the mortality by about 10 per cent.

THE USE OF SUCTION

Tracheobronchial diphtheria, the type of case with a low membrane, does not, however, yield promptly to the applicator treatment. What is considered a further step in the relief of laryngeal diphtheria is the use of suction to draw up the obstructing membrane and mucus.

In an effort to avoid intubation, we have in the past permitted our patients to remain dyspneic for hours, sometimes to the point of exhaustion, struggling for air, we had hoped that they might ultimately expel the membrane, or that the antitoxin might check its rapid formation. At present we employ suction promptly, and as frequently as indicated. The patient is wrapped in a mummy bandage as for intubation, and through a Jackson laryngoscope the membrane and mucus are aspirated by means of a 16 to 18 French silk or metal catheter, which is connected to an aspirating bottle, and in turn connected to an ordinary electric suction pump, capable of producing from 5 to 10 inches of vacuum.

A TYPICAL CASE

The citation of a fairly typical case, one in which, undoubtedly, intubation would have been performed, will illustrate our method of treatment.

A boy, aged 3½ years, admitted, 9 p. m., Oct. 14, 1922, had been ill three days. He appeared acutely ill and was of poor color. He had a croupy cough with moderate intercostal and epigastric retractions. In addition, he had an extensive membrane on the tonsils which spread onto the posterior pharyngeal wall. Because of difficulty in striking a vein, 15,000 units of antitoxin was given intramuscularly. He had had 10,000 just before admission.

Examination of the larynx revealed membrane on the arytenoids, on the aryepiglottic folds, and extending below the cords.

A silk catheter, as described, was passed through the lumen of the laryngoscope and the membrane was aspirated from the larynx so that it was fairly well cleared of membrane.

TABLE 2—THOMSON'S FIGURES OF 1920 COMPARED WITH 1917

	Oct 1917	Nov and Dec 1920
Total number of cases of laryngeal diphtheria	159	132
Number of cases not treated	81	79
Intubation	75	16
Applicator treatment not intubated	0	37
Total number of deaths	42	20
Mortality	26%	15%

There was immediate relief, breathing became easier, retractions disappeared and the color improved. About six hours later the patient became restless and had attacks of difficult breathing and cyanosis. At 5:30 a. m. eight and one-half hours after admission the patient was again examined with the laryngoscope. A thin film of membrane had formed, and two pieces of membrane could be seen flapping under the cords with each expiration. Suction was again employed, with relief to the patient.

During the rest of the day the patient was fairly comfortable, with only occasional attacks of dyspnea. That night, however, suction was again indicated. Small shreds of membrane and considerable mucus was obtained. The patient was comfortable for the remainder of the night. The temperature, pulse and respiration dropped to normal on the third day, and the patient's color was good. For forty-eight hours longer he was still somewhat croupy, but from then on he made a speedy recovery.

¹ Thomson, C. A. Removal of Diphtheritic Exudate from the Larynx: Employment of an Applicator for the Purpose of Avoiding Intubation. J. A. M. A. 78:1198 (April 22) 1922.

In the larynx and the trachea the pseudomembrane is apparently less intimately attached than in the throat, and its removal does not leave as much and, in fact, very little bleeding surface. In the case cited, removal of the membrane relieved obstruction promptly.

From May until the last part of December, 1922 106 patients with laryngeal diphtheria were admitted to the croup service at Willard Parker Hospital. There were twenty-one mild cases which required no treatment. Twelve patients received applicator treatment. Intubation was performed in eighteen cases. Nine patients received suction and intubation. There were forty-six cases in which suction was used exclusively. The total number of deaths was fourteen, a mortality of $13\frac{1}{4}$ per cent.

Of the eighteen patients subjected to intubation, eight died with terminal bronchopneumonia. Three of these were moribund on admission, eight have been discharged cured, and two are still in the hospital and cannot go out without their tubes for any considerable length of time.

Two patients who underwent tracheotomy died.

Of the nine patients treated by suction and intubation, two died and the rest recovered. Both patients had bronchopneumonia on admission.

The remaining two deaths occurred in the series in which suction was used exclusively. Both these patients had toxic tracheobronchial diphtheria. They were ill about four days before admission, one had, in addition, a pharyngeal involvement.

CONCLUSION

1 Suction is especially advocated for cases in which there is a low membrane, which cannot be reached by either intubation tube or tracheotomy.

2 Laryngoscopic examination with suction in severe cases may be repeated when necessary every six or eight hours. It is interesting to note that many of the cases required but one treatment, in these the membrane was loose in the larynx, intubation was indicated and the foreign substance was removed by suction.

3 In reference to the cases in which suction and intubation were employed these being only 16 per cent of the total number of cases in which suction was employed it was noted that intubation was necessary because of a persisting edema.

4 Convalescence from laryngeal diphtheria has been shortened by sparing the intubation patients the strain they were formerly subjected to in the desire to avoid intubation.

5 The avoidance of intubation has no doubt diminished the incidence of "chronics" or patients who cannot endure removal of the cannula.

6 By employing visually guided suction, our mortality has been reduced.

The Environmental Influence on Child Development—The environment of the young child is one of the most important influences in his development. Because of the force of reflection working with this factor of plasticity, the emotional attitudes of those by whom he is surrounded leave their impress on the child before he has lived thirty months. His character is being formed; he is becoming irritable, quick-tempered, moody, or surly and cheerful just as his behavior is determined to a larger extent than people realize by the nature of the adults surrounding him and by all the stimuli to which he is exposed as a result of the modifiability of his response.—W. P. Lucas, *Hospital Social Service* 7:13 (Jan.) 1923.

CARBON TETRACHLORID IN THE TREATMENT OF HOOKWORM DISEASE

OBSERVATIONS ON FIFTY THOUSAND CASES*

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SIWA, FIJI

In a recent issue of THE JOURNAL I¹ reported on the use of carbon tetrachlorid in the treatment of 20,000 cases of hookworm disease in Fiji. My observations were based on experiments conducted up to June 1, 1922. By the end of October, 1922 we had treated an additional 30,000 cases making 50,000 in all.

The picture presented by the earlier article, while true in the light of experience up to the time of writing, may give the unwarranted impression that carbon tetrachlorid is entirely harmless. I desire therefore, to submit here the results of our further experience in Fiji with this drug.

We continued the exclusive use of carbon tetrachlorid in the treatment of intestinal parasites with good results till we had treated 42,000 cases. The dosage used was 0.2 cc (3 minims) of the drug for each year of age up to 15 years. Adults were given from 3 to 4 cc (45 to 60 minims). Up to this time the symptoms reported were few indeed and "mass treatment" with the drug became so increasingly popular among the natives that we contemplated treating whole populations from a central location in each district instead of continuing our house-to-house method of campaign, which is slow in a country where the homes are so widely scattered. Trial of the new plan in one district showed that it was feasible.

We used, until it was exhausted, a supply of carbon tetrachlorid which showed on analysis a small amount of carbon disulphid insufficient to do harm. For the last 8,000 cases we used a presumably chemically pure drug. Among these cases there were three deaths. The government chemist Mr. C. H. Wright, analyzed the new supply of the drug and found it far from chemically pure. A sample of the drug sent to New York was too small for adequate analysis; it showed, however, a fair amount of impurity of unknown nature.

Protocols of the necropsies in the three fatal cases are given below.

FATAL CASE 1—History—A boy, aged 7, an East Indian of Madras parentage was treated Tuesday morning August 22 with 28 minims (175 cc) of carbon tetrachlorid. Magnesium sulphate was left with his parents with instructions to give it at the end of two hours. On Thursday the mother reported that the boy was ill. Sub-assistant Surgeon Kalamkar reported that his illness was not severe. On Friday afternoon the district medical officer was asked to see him and he kindly attended him until the end, giving him careful symptomatic treatment. The boy refused to enter the hospital till Saturday and died early Sunday morning. During the interval from Tuesday until his death, he passed nearly fifty ascarids by mouth and by rectum.

Clinical Course (Reported by Dr. D. C. Ogilvie, District Medical Officer, Naitva).—When seen on Friday August 25 at 5 p. m. the boy was semicomatose occasionally uttering a cry and pressing his abdomen with his hand as if in pain. He could not be sufficiently aroused to speak. The abdomen was very tympanitic, the liver slightly enlarged. The heart was beating strongly, about 80 a minute. There were no

*The treatment described in this paper were given during the progress of a campaign for the control of hookworm disease conducted by the government of Fiji in cooperation with the International Health Board of the Rockefeller Foundation.
1. Lambert, S. M. Carbon Tetrachlorid in the Treatment of Hookworm Disease. Observations on Twenty Thousand Cases. J. A. M. A. 79:20, 2937 (Dec. 16) 1922.

murmurs. The heart sounds were clear. The patient was in a state of semicoma. The pupils were dilated. The knee-jerks were absent. The corneal reflex was present. There was marked trismus. Occasionally there occurred clonic convulsions of the arms and legs lasting for only a short time. The temperature was normal.

Enemas were given and were returned clear. On Friday the patient passed urine naturally. Trismus interfered with the administration of medicine, what was given was for the most part vomited. On Saturday the coma was deeper. The corneal reflexes were absent. Clonic convulsions were more frequent. Trismus was unaltered. The bladder was distended with urine. The temperature was 102.4 F. Treatment on this day was unavailing, the pulse grew weaker in the night, and the boy died at 1 o'clock Sunday morning.

Necropsy (Reported by Dr. D. C. Ogilvie).—The body, examined at 11 a. m., August 27, ten hours after death, was well nourished, with no external signs of disease. The abdomen was protuberant from the presence of tympanites. The heart muscle was rather pale, but presented no marked pathologic change. Antemortem clots were present in both ventricles. It weighed 4 ounces (113 gm.). The lungs were normal. About 2 drams of fluid was present in each pleural cavity. The liver was enlarged, weighing 25½ ounces (725 gm.). Its appearance was most striking, being of a yellow putty color with the surface beneath the capsule dotted closely with small petechial hemorrhages. On section, the outline of the lobule was obscured by the degenerative changes. The bile ducts were patent. The kidneys were congested, and showed macroscopic evidence of cloudy swelling. The weight of the left kidney was 2½ ounces (70 gm.), right kidney 3¼ ounces (92 gm.). The bladder was distended, and contained urine and gas. The urine contained a small amount of albumin, acetone was present, but no sugar. The stomach presented a small area of inflammation, with small submucous hemorrhages on the posterior wall. The intestine was moderately distended with gas. Fifty ascarids were found, most of them alive. The intestine contained no feces, but many worms were seen full of ingested feces. Twenty *Trichuris trichiura* worms were also discovered, but no hookworms. In the second part of the duodenum there was a coiled mass of thirteen ascarids, distending the intestine but not packed so tightly as to cause obstruction. Nothing abnormal was found in the large intestine.

The diagnosis was death from carbon tetrachlorid poisoning.

Dr. S. T. Darling of Baltimore examined specimens of the liver and kidney from this case. The liver showed a very severe necrosis of the central and intermediate zones of the lobules. Perhaps from one half to two thirds of the liver substance had been destroyed. There was an associated cellular proliferative change around the bile ducts. The kidneys appeared normal.

Immediately after this death we had from the same area, within a period of three weeks, five patients who became ill in the same manner. I saw two of them. Both were seriously ill. To the first, a small child of 3 who was unable to stand and was carried to the laboratory in her father's arms, I gave 6 drops of oil of chenopodium. When she was brought in one could see the intestines writhe beneath the thin abdominal walls. She had passed a number of ascarids, estimated by the parents at thirty or forty, and I believed that she still suffered from these. The next day she was all right, after passing about sixty more worms. The four other persons who developed serious symptoms were immediately taken to the hospital and given santonin. They passed ascarids numbering from nearly 100 to more than 150. When they were relieved of these, their symptoms disappeared.

FATAL CASE 2—History.—An Indian boy, aged 5 years, whose parents were Madras born, until three weeks previous to treatment lived at Naitata, Navua. He was treated September 27 with 15 minims (1 c.c.) of carbon tetrachlorid.

Magnesium sulphate was said to have been given two hours later. The patient became sick on the 28th. He was taken to the Colonial Hospital on the 29th, and died three hours after admission.

Necropsy (reported by Dr. Basil M. Wilson, Resident Medical Officer, Suva Colonial Hospital).—The body was well nourished. The liver showed many small petechial hemorrhages under its capsule. Otherwise the organ appeared normal and healthy. The other organs appeared healthy. A portion of the liver and one kidney were removed for microscopic examination. More than 100 roundworms (*Ascaris lumbricoides*) were found in the gastro-intestinal tract.

FATAL CASE 3.—At the end of October the third death occurred. The postmortem examination gave the same findings in the liver that were shown in the other two cases.

Specimens of liver and kidney from Cases 2 and 3 will be available for diagnosis.

A striking feature in connection with these deaths in a comparatively small community is the fact that, although they were given wide publicity, they had no hindering effect on our campaign. No one refused to take the treatment because of the fatalities, and in one district, where examination showed so light an infection that we did not want to carry on mass treatment and had instead established a dispensary, we were overwhelmed the first day by the rush of applicants, and in a few days treated nearly the whole population.

MODIFICATION OF CARBON TETRACHLORID TREATMENT

After our experience with the heavy *Ascaris* infection in Navua, it was thought wise to modify the treatment for young children by adding to the carbon tetrachlorid a vermifuge more effective for *Ascaris*. Oil of chenopodium is considered such a drug. It was added in the proportion of one part of chenopodium to eleven parts of carbon tetrachlorid. The dose of the mixture remained at 3 minims (0.2 c.c.) for each year of age. This meant 2¾ minims of tetrachlorid and ¼ minim of chenopodium for each year. We have now treated with this dosage several hundred persons, many of whom have had fairly severe *Ascaris* infections. The worms have all been removed dead. The mixture is not disagreeable to take and children have not objected to it. The oil is held in a perfect solution in the tetrachlorid. The drugs may quite properly be given in the same proportions to adults in the accepted dosage of from 50 to 60 minims (3 to 4 c.c.).

TREATMENT OF PREGNANT WOMEN

Pregnancy is a condition in which the dire effects of hookworm disease are dramatized most vividly. This aspect of the infection is of first importance to district medical officers in Fiji, for those with a large Indian clientele, it would seem, have among their obstetric cases a number of deaths each year of mother or child or both, as a result of hookworm disease.

Oil of chenopodium is said to be contraindicated in the case of pregnant women, and these form an appreciable portion of a population whose women begin to marry at the age of 11 or 12 and have large families. In the first months of our campaign, these women made a large addition to our list of persons excluded from treatment for medical reasons, and consequently they constituted an extensive source of reinfection for those cured by our treatment. In June 1922, we began treating all women with carbon tetrachlorid, and up to October we had had no case of abortion, though some hundreds of pregnant women had been treated.

CONCLUSIONS

The present paper and that of December 16, 1922, present rather full evidence drawn from 50,000 treatments with carbon tetrachlorid

1 Carbon tetrachlorid has shown itself to be the best vermifuge for the treatment of hookworm disease in a country where *Necator americanus* predominates

2 The drug is palatable, requires no preparation of the patient, and, when pure, is apparently not toxic—all of which features are of advantage in a popular campaign

3 Forty-two thousand persons were treated without morbidity or mortality from the drug. Among 8,000 cases subsequently treated with supposedly pure carbon tetrachlorid, three fatalities occurred. Chemical examinations, however, disclosed that this particular lot of carbon tetrachlorid was far from pure

4 We emphasize the necessity for a pure supply of this drug

5 It is possible that a dosage of 3 minims (0.2 cc) for each year of age with an adult dose of from 45 to 50 minims (3 to 4 cc) is larger than is desirable

6 Where there is a heavy infection with *Ascaris*, the results are improved by the addition of oil of chenopodium

TREATMENT OF THE MENINGEAL FORM OF ACUTE ENCEPHALITIS WITH ANTIMENINGOCOCCIC SERUM

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Apropos of the recent report by Helmholz and Rosenow¹ of three cases of acute encephalitis treated with specific serum, it is of interest to record the striking effect of nonspecific serum in a case of acute encephalitis of the meningeal form

REPORT OF CASE

A schoolboy, aged 15, was a good scholar, but always nervous and inclined to be "twitchy." He was well until the night of Nov 28, 1921, when there was slight fever and digestive disturbance, which was not taken seriously. No physician was called until the morning of Nov 30, 1921, when he was observed by Dr F R Lyman of Hastings, N Y, who suspected meningitis. At 6 p m on the same day, when I saw him, the temperature was 102, the pulse 84 and the respiration 18. He was clear mentally, seemed cheerful and was fairly comfortable. There had been repeated vomiting for twenty-four hours, but no diarrhea. The patient was somewhat excitable. The eyes were suffused, and there was a slight lag of the left eyeball on external rotation. The pupils were equal, but rather small. The neck was not stiff, but the head came forward in a jerky fashion. The throat and ears showed nothing significant. Neither Kernig nor Babinski sign was found. The knee jerks were strongly exaggerated. The leukocytes numbered 8,020, the polymorphonuclears were 87 per cent. No diagnosis was made but it was apparent that a serious infection was developing. On the afternoon of December 1 the patient was seen by Dr Evan Evans who found a well developed picture of meningeal irritation. The boy had vomited and was delirious all night, the temperature having reached 103. At 7 p m the boy was almost comatose and could be roused only with difficulty and then presented a marked delirium. The neck was very rigid. Kernig's sign was positive on both sides. There was a positive Babinski sign on the right. The left abdominal reflex was absent the right was present. The knee jerks were present and not

exaggerated. There was marked hyperesthesia. The pupils were small. The eyeballs were so rolled up beneath the lids that the character of the ocular movements could not be determined. The pulse rate was 80 and regular. The respiration was very irregular and jerky, with periods of rapid and shallow breathing, alternating with slow and rather irregular respiration which suggested profound interference with the respiratory center. The lumbar puncture gave 45 cc of water clear fluid under marked increase of pressure. There were 85 cells per cubic millimeter, 83 per cent of them mononuclear in type. Globulin was increased to one plus. Subsequent culture was negative, and the smear showed no organisms.

In view of the rapid development of the meningeal picture, with obvious involvement of the respiratory center, and the very serious general condition of the patient, it was decided to give energetic treatment with antimeningococcic serum. It was felt that without some active measures the patient would die, and that attempts to secure a so-called nonspecific serum effect were justified. Accordingly, 25 cc of antimeningococcic serum was at once injected intraspinally. One hour later, 50 cc of antimeningococcic serum was injected intravenously. The usual precautions to determine sensitiveness had previously been taken. The patient passed a stormy night and exhibited an irregular and exaggerated, Biot type of respiration with moderate cyanosis. At 6 a m, December 2, 60 cc of serum was given intravenously. At 8 a m, lumbar puncture was done, 30 cc of somewhat cloudy fluid was withdrawn, and 20 cc of serum injected into the subarachnoid space. On this date the patient developed weakness of the left external rectus muscle and was apparently unable to swallow. He remained semicomatose, lost control of his sphincters, and was in grave condition. At 6 p m, 40 cc of spinal fluid was withdrawn. This contained 980 cells. No serum was given. December 3, at noon, after a less stormy night, the maximum temperature was 104, and the pulse was 84. The patient had resumed the ability to swallow, and obeyed simple orders, but was profoundly weak and somnolent. There were myoclonic twitchings. Forty cubic centimeters of cloudy fluid was withdrawn, but no serum was given. December 4, the patient had improved, and began to speak in monosyllables, there was less twitching and less meningeal irritation. From this time rapid improvement began. The temperature became normal, December 7. There was complete paralysis of the left external rectus, moderate left ptosis, and some weakness of the left side of the face. Otherwise there were no residual manifestations. The patient had a very severe serum reaction, but, except for this, made an uncomplicated recovery. The left external rectus remained weak for several months, but eventually was restored to normal.

COMMENT

The somnolence, the ocular and facial palsy, the myoclonia, the clear cerebrospinal fluid with small increase in cells and a high percentage of mononuclears, the absence of organisms on repeated smear and culture, the season and the fact of the not infrequent prevalence of the disease in the region seemed to classify this case definitely as an encephalitis.

It was apparent to observers that the effect of antimeningococcic serum in this case of acute encephalitis of the meningeal type was striking and beneficial. From the time of its administration, symptoms ceased to advance, and within thirty-six hours, the patient, who had not been expected to survive, seemed out of danger.

This case is not recorded in an effort to disparage attempts to develop a specific serum for the treatment of encephalitis. It illustrates, however, the point made by Helmholz and Rosenow concerning the care with which therapeutic results must be weighed, and the importance and probable value of nonspecific serum effects in infections of the character described.

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¹ Helmholz H F and Rosenow E C. Three Cases of Acute Encephalitis Treated with Specific Serum. J A M A 79:2068 (Dec. 16) 1922.

A SIMPLE AND RAPID TEST FOR
ALBUMIN AND OTHER URINARY
PROTEINS*

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While it is true that albuminuria does not always denote renal disease, the inescapable fact remains that albuminuria is almost always the earliest sign of nephritis, and it is generally discoverable months or even years before the symptomatology, the blood chemistry or the most sensitive of renal function tests become diagnostic.¹ Neither clinical nor insurance medicine has as yet taken as thorough cognizance of the importance of minimal amounts of albumin or of the relation of dilution of the specimen to amount of albumin as statistics justify, and chiefly because the albumin tests in common use do not enable one to make precise distinctions between truly persistent and genuinely intermittent albuminurias.

VALUE OF VARIOUS TESTS

As a matter of technical practice, we are accustomed to the use of criteria which are not truthfully informative. For instance, if one uses Heller's test as the criterion, as many do, one is likely to miss altogether or to appraise as negligible the fainter reactions found in more dilute specimens, i. e., specific gravities running lower than about 1.016, when the same amount of albumin in proportion to the concentration of the specimen would have appeared distinctly unfavorable had the specific gravity of the specimen been 1.028. Observations of nephritics or a few dilution experiments will demonstrate this and teach us that, in our daily work, we are employing standards which lead us to classify as intermittent cases of albuminuria which are as a matter of fact persistent, and only apparently intermittent.

Much has been written about what Cammidge² has aptly called the "pitfalls" of Heller's and the heat test, and it is well known that the textbooks teach us not to rely on any one albumin test but to check up the one which may have been employed with one or two other tests. Thus, Heller's, and the heat test in some one of its modifications, have come to be preferred, and they are performed far more frequently than other tests, although strangely enough they have some of the same "pitfalls."

Both Heller's and the heat test serve their purpose beautifully if used understandingly and in a purely qualitative way. They fail us only when we try to stretch them, as it were, to get quantitative results, the truth of the matter being that, for want of better methods, we have been obliged to employ these tests as makeshifts, and we are so accustomed to them that the potential value of more accurate methods is not always fully appreciated. How gross and illusory are the deductions which we have been drawing from the reactions exhibited by the more commonly used albumin tests, a few simple experiments with checks, if carefully

made, will show, and, under the impression that a closer and more truthful means of dealing with albuminuria would prove to be advantageous, our experimental work was undertaken.

In 1889, Roche, layering with a 20 per cent solution, proposed the use of sulphosalicylic acid as a precipitant for albumin in urine. Since then the value of this reagent has impressed numerous other workers primarily, MacWilliam,³ who showed its differential value and recently, Sanford,⁴ who gives it the preference as a qualitative test for albumin in urine. Kober has recommended it as a protein precipitant in connection with nephelometry, and Folin and Denis,⁵ in connection with turbidimetry.

The physicochemical state of proteins in milk, urine, etc., has been the subject of much study, and the work on hydrogen ion concentration initiated by Sorenson has led to the investigation of protein behavior from this aspect. Pauli, Michaelis and others have contributed information regarding the flocculation of protein materials, and the work of Hanzlik⁶ is of special interest with reference to the precipitation of serum albumin.

THE AUTHOR'S TEST

Based on these and our own⁷ experiences, by a process of experimental exclusion a test has been developed that has been thoroughly tried and found exceedingly satisfactory for both qualitative and quantitative testing for albumin in urine,⁸ with a reagent consisting of a solution of 5 per cent sulphosalicylic acid and 20 per cent sodium sulphate. In fact, the test appears to be so reliable that checking up with other tests is rarely, if ever, necessary.

The reagent is highly acid, approximately equivalent to tenth normal hydrochloric acid, and so thoroughly loaded with salt that, when added to an equal volume of urine, a mixture is obtained that is quite uniform in specific gravity, hydrogen ion concentration and salt content, irrespective of the physicochemical constants peculiar to the particular urine tested.

RESULTS

Tests were made on more than 60,000 urines in the Prudential and other laboratories, with these results. Urines loaded to great excess with uric acid, urates, phosphates, oxalates, urea, creatinin and other urinary constituents have invariably failed to produce any cloudiness at all with the reagent. A number of urines containing resinous and emulsifying substances which gave false Heller's and heat reactions did not develop

3 MacWilliam J. A. A New Test for Albumin and Other Proteins. *Brit. M. J.* 1: 837-840 (April 18) 1891. On the Use of Salicylic Sulphonic as a Test for Albumoses and Peptones. *ibid.* 1: 115 (Jan. 16) 1892.

4 Sanford A. H., Connor H. M., Magath T. B. and Heck B. S. The Significance of Slight Albuminuria. Collected Papers of the *Mayo Clinic* 13: 1921, reprinted from the Proceedings of the American Life Convention pp. 5470-1921.

5 Kober I. A. Technical Applications of Nephelometry. *J. Indus. & Engin. Chem.* 10: 556 (July) 1918. Nephelometry in the Study of Proteins. *J. Am. Chem. Soc.* 33: 290 (March) 1911.

6 Folin Otto and Denis Willie. The Quantitative Determination of Albumin in Urine. *J. Biol. Chem.* 18: 273 1914.

7 Hanzlik I. J. Precipitation of Serum Albumin and Glutin by Alkaloidal Reagents. *J. Biol. Chem.* 20: 1 1911.

8 Exton W. G. Rapid Tests for Albumin. *Proc. A. Life Ins. Directors* 1921 p. 188.

9 A liter of the reagent is made by dissolving 200 gm. of sodium sulphate (crystals) in from 700 to 800 cc. of distilled water, cooling down to about 35°C., 20 gm. of sulphosalicylic acid is dissolved by stirring and without further heating and enough water added to make 1 liter. The reagent is so strong that it is added indefinitely. The test is performed by mixing equal parts of reagent and warming. Even the warm water does not spoil the test but is unnecessary. A perfectly clear transparent solution is obtained with the degree of turbidity concentration of albumin.

* From the Prudential Laboratory.

1 In a private communication Dr. William G. Lyle, director of the Pathological Laboratory, Roosevelt Hospital and Harriman Research Laboratory, informs me that, in an unpublished statistical study of 2,500 records of patients in whom in addition to routine urinalysis blood chemistry, renal function, diet and dye tests were made, the data disclosed albuminuria as the earliest sign of renal disease.

2 Cammidge P. S. Pitfalls in the Examination of Urine. *Pol. Clin. J.* 7: 76 (June) 1905.

torium, but has been showing improvement since. Her cough has become less distressing, expectoration has diminished considerably, and dyspnea has become less marked. She has gained in weight and strength, and is able to be up and about, assisting in household duties in addition to assigned exercise.

COMMENT

The most interesting features in the clinical history of these cases is their similarity to acute miliary tuberculosis. Here we have two patients whose initial symptom was hemoptysis followed by marked constitutional symptoms of toxemia and, more especially, dyspnea, which was apparently out of all proportion to the discoverable physical signs in the chest—a clinical picture almost typical of acute miliary tuberculosis. Furthermore, roentgenographic examinations afforded undeniable evidence of the existence of miliary tuberculosis by disclosing the typical lesion. The subsequent history of these cases, however, was not in concert with the suspected early diagnosis. There was a decided improvement in the condition. The constitutional symptoms abated, the local symptoms diminished in severity, and dyspnea disappeared. Simultaneous with this, the roentgenograms disclosed at first evidence of clearing of the collateral inflammation, then evidence of fibrosis and possibly calcification of some of the tubercles, and finally also resolution in other areas once the seat of extensive miliary tuberculation.

Extensive miliary tuberculation of the acute type has been the subject of extensive investigation for many years, and a voluminous literature has accumulated as a result of the numerous recorded observations. Until recently, however, very little attention has been given to the study of those cases of chronic pulmonary tuberculosis in which the miliary tubercles are diffusely scattered throughout both lungs—a type that may possibly be designated as chronic pulmonary miliary tuberculosis. Northrup¹ discusses the case of a boy,

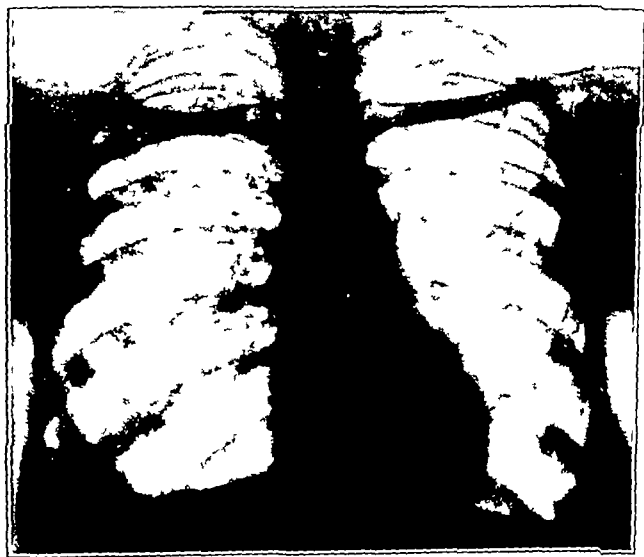


Fig. 3 (Case 2).—Extensive dissemination of miliary tubercles of uniform size and distribution throughout both lungs.

aged 6 suffering from pulmonary miliary tuberculosis diagnosed by roentgenographic studies, who left the hospital much improved and whose disease subsequently ran a chronic course. Von Muralt² reported two similar

cases, in which, although the patients subsequently succumbed as a result of extensive miliary tuberculation of the central nerve system and other organs, had been known, on the strength of roentgen-ray findings, to suffer from pulmonary miliary tuberculosis. Rebecq-Bierman³ has called attention to the mild course of the disease in some who on roentgenologic study show



Fig. 4.—Extensive miliary tuberculation of left lung. Tubercles appear discrete.

evidence of extensive miliary tuberculation of the lungs, and Wallgren,⁴ recounting his experience at the Pirquet clinic, mentions the fact that he had there seen two children who were doing well more than six months after a diagnosis of miliary tuberculosis was made in their cases on clinical and roentgen-ray evidence.

A study of the patients admitted to our care disclosed the fact that pulmonary miliary tuberculosis of the chronic type occurs often enough to be of more than academic interest. Miliary tuberculation affecting an entire lung, or confined to the lower lobes of organs already affected with fibrocasseous tuberculosis in the upper lobes, is not necessarily of grave prognostic import. Figures 4 and 5, respectively representing unilateral and moderately extensive bilateral chronic miliary tuberculation, are of patients who made remarkable progress toward recovery during their stay at the sanatorium, the former having already been discharged with disease arrested, while the two cases with very extensive pulmonary miliary tuberculosis which form the basis of this communication have reached a stage wherein their lesions can be safely considered to be arrested in the first instance and quiescent in the other. It is altogether fair, therefore, to stress the fact that the prognosis in this form of miliary tuberculosis, other things being equal, should be promulgated with much less of the usual pessimism.

The diagnosis of this type of lesion is impossible of attainment without the assistance of repeated and painstaking roentgenologic observations. In our own cases, as well as those reported by Northrup and von Muralt, not a single correct diagnosis was made without such help and we have reason to believe that the

¹ Northrup, M. W. P. Disseminated Miliary Tuberculosis of Lungs and Skin. *Am. J. Dis. Child.* 7: 24 (Jan.) 1914.
² Von Muralt, L. *Correspondenz-Schweizer Aerzte* 46: 81 (April 15) 1916.

³ Bierman, M. *Minnesota Med.* 5: 661 (Nov.) 1922.
⁴ Wallgren, A. *Lapski Lakaref Forh.* 27: 1 (March) 1922, quoted in *Tubercle* 4: 183 (Jan.) 1923.

prucity of the literature on this subject is undoubtedly due to the fact that many clinicians do not yet realize how many pathologic changes in the lungs are missed when roentgenographic studies are not a part of the routine in the examination of pulmonary patients. The physical signs produced by this type of lesion are commonly interpreted as being due to secondary bronchitis and bronchiectasis, or to pleuritic changes so frequently encountered in those with advanced tuberculosis.

It is only on careful and often repeated roentgenographic examination that the true nature of the existing pathologic processes is disclosed, a fact that cannot be too emphatically stressed. Furthermore, serial roentgenograms are indispensable in following the progress of the case. The physical signs offer no assistance in this direction. It is the serial roentgenograms that demonstrate the multifarious changes that may occur as clearing, fibrosis, calcification, and even partial resolution, take place.

The mutations of the roentgenographic shadows observed in these cases are not unlike, but are perhaps more remarkable, than those seen in ordinary parenchymatous tuberculous involvements. At first there is evidence of clearing of the collateral inflammation, with disappearance of the fuzzy character of the tubercles. The lung takes on a more transparent appearance and the tubercles stand out more clearly, appearing less confluent, although not much denser than before. At the same time, there may also be definite evidence of fibrosis at the hilum and an increase in the linear markings radiating from it in all directions toward the periphery, along which discrete tubercles seem to arrange themselves, giving the beaded appearance so often noted. When improvement goes on unhindered,



Fig 5—Moderately extensive bilateral dissemination of the miliary tubercles which appear discrete.

the numerous tubercles become denser, more clear-cut and discrete, suggesting further fibrosis, and eventually even calcification may occur. Figure 6 shows the roentgenographic appearance of the lungs of a man admitted

to our care with a history pointing to extensive pulmonary tuberculosis in adolescence. Here the calcification of a widespread lesion has taken place to an extent only rarely observed, with the result that the

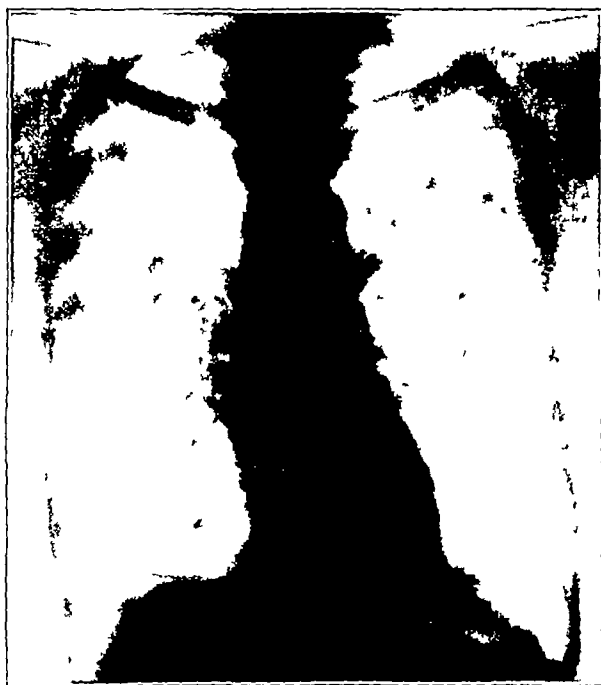


Fig 6—Calcification of a widely disseminated bilateral miliary tuberculosis.

patient has practically been cured of his tuberculosis, judging from the present signs and symptoms.

That in extremely rare cases definite evidence of resolution is seen in areas previously extensively involved with miliary tubercles has already been brought out in the earlier part of this paper, and was illustrated by Figures 1 and 2. The work of Gardner² and others is of interest in this connection. Gardner shows that resolution of a tuberculous focus can take place in animals infected with an attenuated organism.

DIFFERENTIAL DIAGNOSIS

Extensive chronic pulmonary miliary tuberculosis cannot always be easily differentiated from pneumoconiosis. In neither condition may severe constitutional symptoms of toxemia enter into the clinical picture when the patient presents himself for study. Hemoptysis may be complained of in either case, and dyspnea may be the cardinal symptom in sufferers of one malady or the other. Moreover, the roentgenographic appearance of the lungs in both instances is essentially similar. Even the presence of a fibroid process in the upper lobes of the lungs does not necessarily settle the diagnosis, for, as it is well known, the pathologic changes engendered by long-standing pneumoconiosis may very strikingly resemble the changes seen in advanced fibroid phthisis. It is only the careful inquiry into the previous history of the patient, particularly into the occupational hazards which he may have been exposed to, and the repeated examination of the sputum, that can give a basis for

are known to produce pneumoconiosis, on the other hand, tubercle bacilli may be found in the sputum and thus help establish the true nature of the pathologic process. However, it must be remembered that pulmonary tuberculosis may and often does develop in subjects suffering from pneumoconiosis.

From acute pulmonary military tuberculosis the chronic form can be differentiated only by observing the clinical course of the case, the previous history in either affection being as a rule irrelevant. In the former, the constitutional symptoms are distressing from the very outset, and the disease runs rapidly to a fatal termination. The physical findings to the very end may offer no clue to the nature of the process. On the other hand, in the chronic form in which the clinical picture may at first be undistinguishable from the acute type of the disease, the subsequent tendency to improvement and chronicity in the presence of a lesion that on roentgenologic examination is found to be military in character is sufficient to warrant the diagnosis of the chronic form of this affection.

There remains another condition that may be confounded with chronic pulmonary tuberculosis, namely, pulmonary military malignancy. This pulmonary affection, although of rare occurrence, has frequently puzzled both the internist and the roentgenologist in their efforts to establish a differential diagnosis between these two conditions. The symptomatology of the two may be almost identical, and it is only a careful search for the primary neoplasm or the finding of tubercle bacilli in the sputum that finally clinches the diagnosis.

It is different in the case of the usual metastatic pulmonary neoplasm, the roentgenographic appearance of which is quite characteristic. In such cases the shadows are of various sizes and densities, and there are no evidences of collateral inflammations to designate specific tissue reaction. On the other hand, in military tuberculosis the tubercles are much smaller and they are usually more evenly distributed and are more uniform in size and density. There are also to be seen some evidences of collateral inflammatory changes indicative of tissue reaction to the tubercle.

CONCLUSIONS

1 In the form of pulmonary tuberculosis described in the foregoing, extensive military tuberculation is an important element in the lesion, and the chronic form of this affection may possibly be designated as chronic pulmonary military tuberculosis.

2 There is a similarity between the early clinical picture of the acute and that of the chronic forms of pulmonary military tuberculosis.

3 The chronic type of this affection is relatively mild and of fair prognosis.

4 A correct diagnosis in and a study of the progress of cases of the chronic form of pulmonary military tuberculosis cannot be made without repeated roentgenographic observations, the physical findings being of little value in either respect.

5 A differential diagnosis must be made between this type of lesion and those caused by acute military tuberculosis, pneumoconiosis and military pulmonary malignancy.

AN OPERATION FOR HALLUX VALGUS

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Notwithstanding the variety of operations proposed and used for the common deformity of hallux valgus, the appearance of the feet after operation has not been satisfactory in a considerable number of cases either

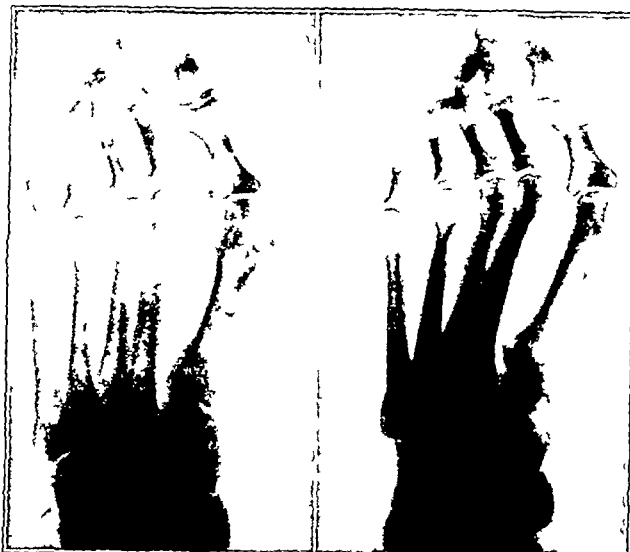


Fig 1—Hallux valgus before operation (left) and six months after operation (right) showing recurrence of deflection of great toe



Fig 2—Change in the plane of the articular surface of the head of the first metatarsal after a period of six months had elapsed there was recurrence of a moderate degree of the original deformity

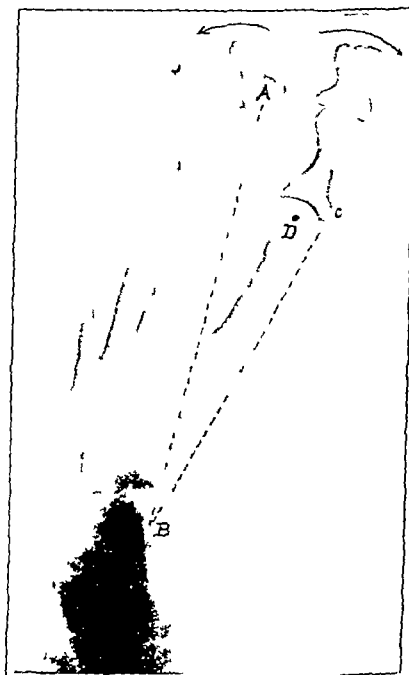


Fig 3—Effect of tendon pull. When the tendon of the extensor hallucis pulls at the point of its normal insertion (A) it tends to increase any lateral deflection that may be present. If the end of the tendon is transplanted to the medial aspect of the base of the first phalanx (C) the toe is pulled inward. D indicates the center of joint motion.

to the patient or to the surgeon. It is true that relief of pain is the chief end sought, and this may be gained by any procedure that removes both the exostosis on the exposed border of the head of the first metatarsal

and the bursa overlying it. However, if in addition to this a normally straight toe can be produced without jeopardizing function, the final result would be more gratifying, and, as a matter of fact, it is not difficult to attain.

The fundamental causes of the postoperative recurrence of the deformity are the distorting line of pull of the tendon of the extensor hallucis muscle, and an alteration in the plane of the articular surfaces of the bones which form the great toe joint. Tapered shoes and stockings are, of course, contributing causes, but, in spite of these, the toe will resume an approximately normal alignment when pressure is relieved, if mechanical conditions permit.

Correction of either the abnormal line of tendon pull or of the plane of the articular surface alone is not sufficient when there is marked deformity. Figure 1 illustrates a case of hallux valgus before and after an incomplete operation. In this instance the removal of the exostosis and the bursa was followed, as usual, by the relief of pain, but the deformity appeared again sometime later.



Fig 4—Line A alteration in plane of articular surface of head of metatarsal; line B bone incision at base of first phalanx to compensate for condition present in head of metatarsal.

Figure 2 illustrates a case in which the plane of the articular surface was changed by excision of a considerable portion of the head of the first metatarsal, and yet the deflection of the toe again became noticeable.

These are instances of a common and annoying experience which rearrangement of the point of attachment of the tendon of the extensor hallucis and proper consideration of the plane of the joint will prevent.

An important factor in the development of a faulty line of pull of the tendon is the loose attachment of its sheath at the base of the toe, which permits its

enclosed structure to creep to the outer side of the center of motion of the joint, once the digit has been crowded by shoe or stocking from its normal alignment. This gives the tendon a bow-string effect shown diagrammatically by the line A-B in Figure 3.

To overcome this it has been my custom to sever the tendon of the extensor hallucis a short distance above its insertion, and to dissect the tendon and its sheath free to a point somewhat above the head of the first metatarsal. Both structures are then carried toward the median line, and the slightly macerated end of the tendon is implanted in a shallow channel on the medial side of the base of the first phalanx, covered with periosteum and other fibrous tissue and firmly sutured in this position. Thus the line of pull is established inside the center of motion of the joint (D) as shown by the line B-C in Figure 3.

In very mild cases this change of tendon insertion may be all that is required to prevent a recurrence of

the outward deviation of the toe. In long-standing cases with decided deformity, however, there is frequently an alteration in the plane of the joint surface which gives it an outward tilt.

This may be sufficient to defeat the purpose of tendon transplantation, and therefore it seems advisable to compensate for the abnormal plane of the head of the metatarsal by shortening the medial border of the first phalanx.



Fig 5—Line of incision through which joint is approached.

To accomplish this, a wedge is excised from the base of the bone, and its articular surface is concaved, as shown by line B in Figure 4.

In my experience this has proved more satisfactory than reshaping the head of the metatarsal, both from an operative and from a functional point of view.

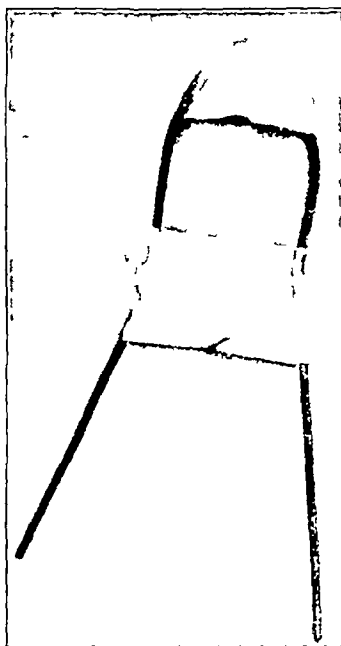


Fig 6—Wire splint designed to be incorporated in the postoperative dressing. Any degree of overcorrection may be obtained by bending the wire; the lower strap of adhesive should be well above the incision.

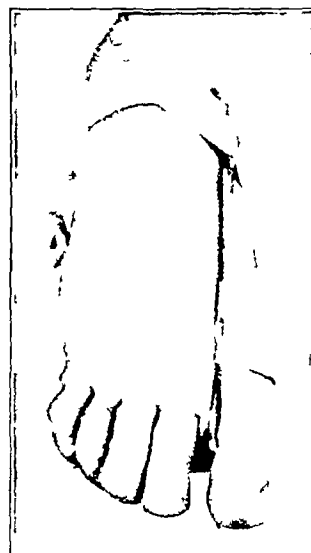


Fig 7—Use of wire splint in dressing.

A very practical approach to the joint is indicated in Figure 5. An elliptic incision, with an angle prolonged downward toward the removal of the redundant skin and at the same time leaves maturation when the wound is

The simple wire splint shown in Figures 6 and 7, which I have used for many years, provides a convenient way of holding the toe in overcorrection during convalescence. It is much more comfortable than a plaster dressing, and, as it may be easily removed, it



Fig. 8—Result six months after operation

affords an opportunity for inspection of the wound and for the institution of voluntary motion, which should be encouraged at the end of a week.

The result that may be expected from this operation is shown in Figure 8.

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LUPUS ERYTHEMATOSUS AS A SYSTEMIC DISEASE*

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The clinical picture of localized or discoid lupus erythematosus, with which I wish to contrast the disseminate form with constitutional manifestations, is familiar to most practitioners. The conception of a grave form of lupus erythematosus with severe systemic disturbances and with the extension of the local process originated with Kaposi. In 1872 he first called attention to the presence of toxic symptoms, and was evidently familiar with the hyperpyrexial attacks occasionally seen when discoid lesions are present. Very little has been added to an understanding of the disease since his time. Boeck¹ temporarily confused the problem when he designated lesions on the fingers, which can now probably be classified with Darier's follicles, as lesions of disseminate lupus erythematosus. The whole matter was probably still more obscured by the French tendency to enumerate a large number of subclasses of lupus erythematosus which essentially are only different degrees of the same disease.

* From the Section on Dermatology and Syphilology, Mayo Clinic.
¹ Boeck, C., quoted by Jadassohn, *Handbuch der Hautkrankheiten*, herausgegeben von Prof. F. Moracek, Vienna, Holder & Co., 1904.

While the cutaneous picture of disseminate lupus erythematosus is fairly well understood, the constitutional background remains, in many respects, a mystery. It is precisely this constitutional background in which the internist and the general diagnostician are fundamentally interested, because in combination with the cutaneous lesions it presents a wide variety of deceptive

CUTANEOUS CHARACTERISTICS OF DISSEMINATE LUPUS ERYTHEMATOSUS AS CONTRASTED WITH THE CHRONIC

Disseminate Lupus Erythematosus	Chronic Discoid Lupus Erythematosus
1 Many lesions usually	1 Few well defined patches only
2 Superficial lesions with slight atrophy	2 Deeper lesions with definite scarring and telangiectasia
3 Involvement not only of face but also of hands, fingers, neck, chest and sometimes any part of the body	3 Usually confined to face, ears and scalp
4 Actively inflammatory, reddish to purplish patches	4 Indolent, with erythematous border only
5 Borders of lesions ill defined, sometimes resemble chronic type, sometimes more like erythema multiforme or only atrophic purplish patches	5 Border of lesions elevated and erythematous with characteristic epithelial plugging and often telangiectasia
6 Very little scaling, often dirty crusting, vesicle or bulla formation	6 Dry, extremely adherent scales, on removal epithelial plugs from the follicles may be recognized on the under side
7 Often involves the mucous membranes	7 Rarely extends beyond the vermilion border of the lip

In a goodly proportion of disseminate cases both types of lesions may be present.

possibilities. In fact, it is impossible at this time to estimate the actual incidence of disseminate lupus erythematosus because there is every probability that cases of this type masquerade under medical diagnoses such as scarlet fever, erysipelas, typhoid fever, pellagra and the symptoms of upper abdominal lesions.

CUTANEOUS LESIONS

In the hierarchy of cutaneous diseases, disseminate lupus erythematosus differs from the chronic discoid type, with its lesions limited largely to the face and



Fig. 1—The eruption of disseminate lupus erythematosus as it frequently appears on the face.

scalp, in that disseminate lupus erythematosus resembles the erythema multiforme group of dermatoses, instead of the exceedingly chronic atrophic changes involving the follicular structures of the face and scalp (Fig. 1). Acute or disseminate lupus erythematosus

has a tendency to become more widespread in the skin than the discoid type, resembling patches of dermatitis, and erythematous plaques, sometimes bullous in character. These lesions, in contrast with the discoid type, may appear on the extremities, and the mucous mem-



Fig 2—Lesions of disseminate lupus erythematosus on the forearm

brane may be involved in varying degrees, somewhat as in the severe types of toxic erythema (Fig 2). The chronic type may be present for years and then, especially in young persons, assume characteristics of the disseminate form. The accompanying table gives a condensed classification of the difference between cutaneous lesions of the disseminate and chronic types of lupus erythematosus.

CONSTITUTIONAL SYMPTOMS

The systemic symptoms of disseminate lupus erythematosus vary markedly in severity. Quite commonly the patient complains of a lack of physical endurance for years before cutaneous lesions appear. Irritability and sensitiveness are out of proportion to the apparent physical ailments. Vague abdominal complaints, at times severe, are almost always referred to. Very common also are aches and pains of various degrees in the joints. There may be a moderate to marked elevation in temperature for a long time, or there may be sharp hyperpyrexial attacks.

DIAGNOSIS

An outstanding feature of the condition is the protean character of its manifestations. It may resemble a number of diseases with widely varied symptoms. When the cutaneous manifestations predominate, seborrheic or eczematoid dermatitis, erythema multiforme, dermatitis venenata, the sarcoid of Boeck, lichen planus, erysipelas or pellagra may be more or less closely simulated. When the abdominal symptoms are uppermost, the presence of marked pain or diarrhea may lead to the hasty diagnosis of cholecystitis, gastric or duodenal ulcer and chronic appendicitis or colitis. If the toxic symptoms are pronounced, with high temperature and possibly a "typhoid state," confusion with typhoid fever, pneumonia, pyemia, rheumatism or malignant

endocarditis often occurs (Fig 3). The suspicion of typhoid fever is strengthened by the frequent occurrence of leukopenia, sometimes extreme. In Case 4 the leukocyte count fell to 1,800 on one occasion.

In avoiding possibilities of error in diagnosis, a careful study of the eruption is essential. The face and scalp must be scrutinized for signs of old lesions, atrophy and patches of alopecia, the face studied for erysipeloid flush, the lips for silvery, the mucous membranes for erosions, the skin of the upper trunk and neck for signs of old lupus erythematosus, and the fingers for bluish, chilblain-like papules and patches. It may almost be accepted as axiomatic that, whenever lupus erythematosus extends from the face to the body and extremities, it becomes menacing. Conversely, cutaneous lesions occurring on the body, extremities or mucous membranes in association with chronic discoid lupus erythematosus must be carefully weighed as an evidence of impending dissemination, the patient's history closely investigated, and his constitutional background studied. The identification of a disseminate lupus erythematosus is of the gravest prognostic significance, and its treatment a problem of the utmost difficulty.

CHARACTERISTICS OF THE HISTORY

The history of a patient with typical lupus erythematosus in a disseminate phase presents striking characteristics: malaise, irritability, periodic lesions of the mouth, vague abdominal complaints such as pain, diarrhea, sometimes vomiting, hyperpyrexia, and occasionally cardiac, hepatic, gynecologic, neurotic and psychic symptoms. In many instances, the urine contains large quantities of albumin. It is apparent that without lesions of the skin as a guide, this is not a highly specific picture.

ETIOLOGY

The prevalence of tuberculosis of the gland is very striking. The tuberculous adenitis may not be demonstrable clinically, yet the retroperitoneal, pelvic and

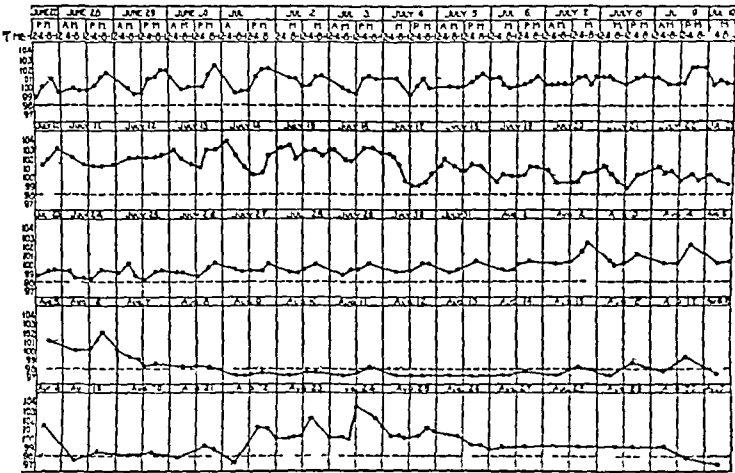


Fig 3 (Case 4)—Temperature chart.

mesenteric groups may be severely affected, as shown in Cases 1 and 2.

CASE 1—Disseminate lupus erythematosus with lesions of chronic and acute types. A man aged 33 examined April 1, 1918 had had abdominal pain, fever, and eruption on the

skin, patches had been present for five years, and recently they had been spreading rapidly. Examination revealed typical lesions of chronic lupus erythematosus on the face, and a large number of the disseminate type on the face and neck. A slight amount of albumin was found in the urine. Exploration of the abdomen was advised because of epigastric pain and a septic type of temperature. Nothing to account for the symptoms was discovered. Treatment was of no avail, and the patient died. At necropsy, very extensive tuberculous involvement of the peribronchial, retroperitoneal and pelvic lymph glands was noted. The spleen and the left lung were also involved. The kidneys were nephropathic.

No definite evidence of tuberculous glands in the abdomen was demonstrable during life, such evidence was not even discovered on surgical exploration, yet the lymphatic system showed severe tuberculosis.

This case strikingly illustrates the presence of abdominal complaints in association with disseminate lupus erythematosus, and the importance of making a correct diagnosis to obviate an unnecessary operation.

CASE 2—Acute disseminate erythematosus. A woman, aged 20, examined in September, 1920, had had a cervical abscess (tuberculous?) opened in 1914. Six months before she had had typhoid fever and since then various symptoms, chiefly epigastric pain, falling hair and exhaustion. Physical examination revealed the skin generally dry and hot, and the hair dry, thin and lusterless. There were patches of erythema with purplish tinge on the cheeks suggesting chronic erysipelas, similar patches on the fingers, and silvering of the lower lip. All the lesions were well defined and distinctly atrophic. The urine contained large quantities of albumin and an occasional hyaline cast. The erythrocytes numbered 3,500,000, later slightly less than that number, lymphocytes 2,870. Roentgenograms of the chest contained evidence of tuberculosis in the left upper lobe. Acid-fast bacilli were present, guinea-pig inoculation proved negative. A subcutaneous tuberculin test was not satisfactorily performed. Rest treatment, tonic measures, quinin and pills of ferrous carbonate (Blaud's pills) were given without benefit. A severe "flare-up" occurred after tonsillectomy. This subsided somewhat and the patient was better for a time, but died, Aug 13, 1921. Necropsy revealed ulcerative tuberculous enteritis, caseating abdominal lymph nodes, and miliary tuberculosis of the spleen. The kidneys were almost double in weight, and definitely nephropathic. Serum from the lymph nodes contained tuberculous bacilli. Cultures of the blood and spleen were sterile.

The condition had been diagnosed typhoid fever, probably because of periodic attacks of hyperpyrexia, a mistake in diagnosis easily made. The diagnosis depended on cutaneous lesions, and during periods of remission these were little in evidence. The flare-up of erythema on the face and the high fever after tonsillectomy led to the mistaken diagnosis of erysipelas. Despite careful clinical study but little evidence of tuberculosis was revealed, yet tuberculous glands in the abdomen were conclusively proved at necropsy.

Brooke,² Roberts,³ Reitmann and Zumbusch,⁴ and Low, Logan and Rutherford⁵ have reported cases in which glands were extensively involved, and recognized on postmortem examination. Sequiera and Balean⁶ report the presence of tuberculous glands in five of eleven cases of acute disseminate lupus erythematosus, necropsy was not performed in any of these. On the other hand, in another case these authors were unable to find glandular tuberculosis at necropsy. Gennerich⁷ also reports a generalized adenopathy in a case which in his opinion was not tuberculous.

For a long time the extreme sensitiveness of patients with acute disseminate lupus erythematosus to comparatively banal injuries has been recognized. Sometimes these injuries are so insignificant that they would be ignored by healthy persons. The application of slightly irritating drugs, moderate heat, small doses of

roentgen ray, radium or actinic light occasionally tend to cause a definite spreading of the lesions of the skin, and also add to the toxic symptoms complained of by the patient. The therapist is also cognizant of sensitiveness to irritants, and it has almost become the rule to start the treatment of lupus erythematosus, unless it is exceedingly indolent, with the mildest applications. Unusual sensitiveness to tuberculin was first noted in this country by Ravogli,⁸ who reported two cases of his own and cited others in the literature. His patients died, subsequent to the injection cutaneously of 0.001 mg of tuberculin. This preparation should not be used for diagnostic or therapeutic purposes in such cases.

Pulay⁹ and Gennerich noted the hypersensitiveness of patients with disseminate lupus erythematosus, and devised rather ingenious hypotheses with regard to

the etiology of the disease based on this feature. The former is inclined to attribute the manifestations of the disease to a photosensitiveness, chiefly because of the distribution of the eruption on the exposed parts. He attributes this photosensitiveness to certain metabolic products found in such diseases, for example, gout, diabetes and tuberculosis, and in other less definite

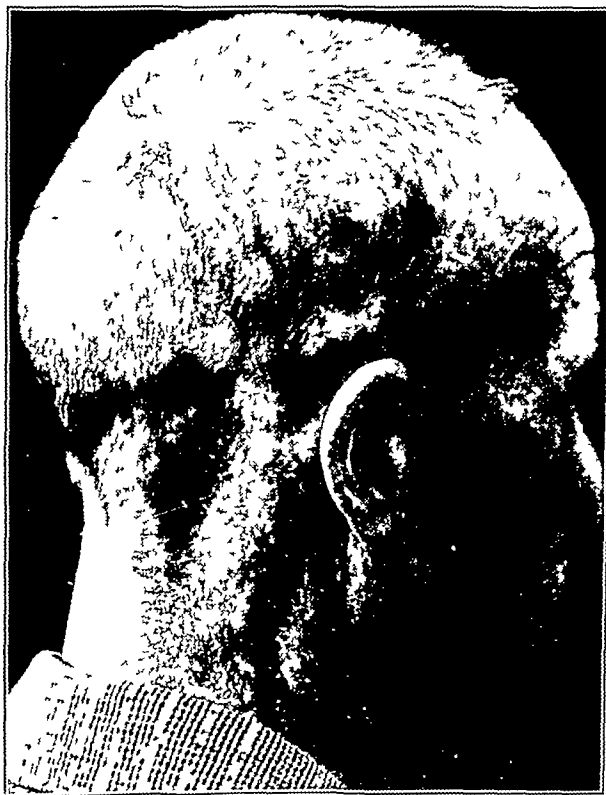


Fig 4 (Case 5)—Patient before treatment of the glands with roentgen ray

- 2 Brooke H G. Lupus Erythematosus and Tuberculosis. *Brit J Dermat* 7: 73-77, 1893.
- 3 Roberts L. Acute lupus erythematosus (aigu d'emblee). *Brit J Dermat* 23: 167-178, 1911.
- 4 Reitmann K and von Zumbusch L. Beitrag zur Pathologie des Lupus erythematosus acutus (disseminatus). *Arch f Dermat u Syph* 99: 147-180, 1910.
- 5 Low R C, Logan W R and Rutherford A. A Fatal Case of Lupus Erythematosus with Autopsy. *Brit J Dermat* 32: 253-262, 1920.
- 6 Sequiera J H and Balean H. Lupus Erythematosus. A Clinical Study of Seventy One Cases. *Brit J Dermat* 14: 367-379, 1902.
- 7 Gennerich W. Ueber die Aetiologie des Lupus erythematosus. *Arch f Dermat u Syph* 135: 184-207, 1921.
- 8 Ravogli A. Lupus Erythematosus Diffusus Unfortunately Treated with Tuberculin. *J Cutan Dis* 33: 266-272, 1915.
- 9 Pulay E. Stoffwechselpathologie und Hautkrankheiten. *Dermat. Wchnschr* 73: 1217-1234, 1921.

disturbances. Products of metabolism, such as glucose, acetone, hemoglobin, urea, lactic acid, hematoporphyrin and tyrosin, and other chemical substances have been shown to produce photosensitiveness, and any one of these substances, Pulay believes, may be the sensitizing agent in lupus erythematosus. He explains those cases in which tuberculosis is much in evidence as due to the sensitizing action of the tuberculotoxins.

Gennerich believes that there is a sensitizing agent produced in the destruction of the lymph glands by an unknown disease. According to his opinion, certain ferments of the lymphocytes are liberated which have a special affinity for the vascular system. The symmetry and localization on exposed parts he explains by the hematogenous distribution of the toxins, and their arrest in the capillaries which are subjected to irritation by light, air and mechanical agents. The toxins act as foreign proteins, and, when abundant, produce anaphylaxis. He admits the frequent association of lupus erythematosus with lymphatic disease, but does not believe that the lymphatic involvement is tuberculous.

Experience has also emphasized the hypersensitiveness of patients with disseminate lupus erythematosus to mild trauma. Particularly after the removal of tonsils and teeth, both systemic and local manifestations have been temporarily increased.

Interference with a focus of infection, as such, may produce extreme reactions. The removal of a single tooth produced a stuporous state in three of our patients. The usual reaction to the removal of pyogenic foci and to interference with a tuberculous focus is illustrated in Case 3. The hypersensitiveness to the removal of such foci need not necessarily be evidence of an etiologic relationship to the disease, although it is possible that the toxins in these foci may represent the chemical substances acting as sensitizers to light, according to Pulay's conception.

CASE 3—Disseminate lupus erythematosus with lesions of the acute type. A woman, aged 42, examined, April 27, 1921, had had burning and itching eruptions during the warmer months for ten years (severe the last three months), and enlarged cervical glands for five years. One sister had died of tuberculosis. Examination revealed acute lupus erythematosus on the face back and arms, old neuroretinitis, and tuberculous cervical adenitis. The urine contained large quantities of albumin and occasional showers of casts. The patient was emaciated and exhausted. General measures of treatment with rest in bed were of no avail. A cervical gland was removed for biopsy, and the patient became severely toxic and passed into a semicomatose condition with rise in temperature and extreme vertigo. Tuberculosis of the cervical glands was confirmed by the biopsy. Nine teeth were removed, one at a sitting. Each extraction was fol-

lowed by malaise and stupor. The removal of all dental foci was followed by definite temporary improvement in the eruption and general health. The patient died one year after she was first examined.

The nature of the eruption was characteristic and needed only a proper diagnosis to explain the systemic symptoms. The sensitiveness to interference with pyogenic foci and tuberculous foci was so marked as to suggest an allergy to toxin in the focus rather than to response to surgical trauma.

It would seem more likely that a procedure such as the extraction of an infected tooth would act more in the nature of an injection of a nonspecific protein than as an eliminator of a photosensitizing agent, thus theory would also better explain the temporary improvement often noted some time after all the pyogenic foci have been removed. The disease has improved

strikingly after attacks of erysipelas, which acted as a nonspecific vaccination.¹⁰ Engman and McGarry¹¹ report improvement in the discoid type of the disease following the use of typhoid vaccine as a foreign protein. Improvement following any of these procedures is usually temporary, and if there is a definite etiologic relationship it is not likely that the pyogenic infection is alone responsible for the cutaneous manifestations of lupus erythematosus.

My personal observation of the cases under consideration inclines me strongly to the belief that lymphatic tuberculosis is a fundamental predisposing cause of disseminate lupus erythematosus. My study¹² of the discoid type suggests that clinically recognizable tuberculosis is a relatively unimportant element in the etiology of the chronic form of the disease. This apparent paradox may perhaps be reconciled by the hypoth-

esis that the difference between chronic and acute lupus erythematosus lies chiefly in the activity of the tuberculous focus in glandular tissue, and the patient's resistance or response to it. That the tuberculous factor in either form of lupus erythematosus is not necessarily clinically recognizable, even though it may be etiologically important, is suggested by two of the cases in the series in which the patients were virtually riddled with glandular tuberculosis without any clinically recognizable signs. Certain elements strongly suggest that patients with disseminate lupus erythematosus are under a cross fire from tuberculosis and septic infection the one creating an allergic background while the other

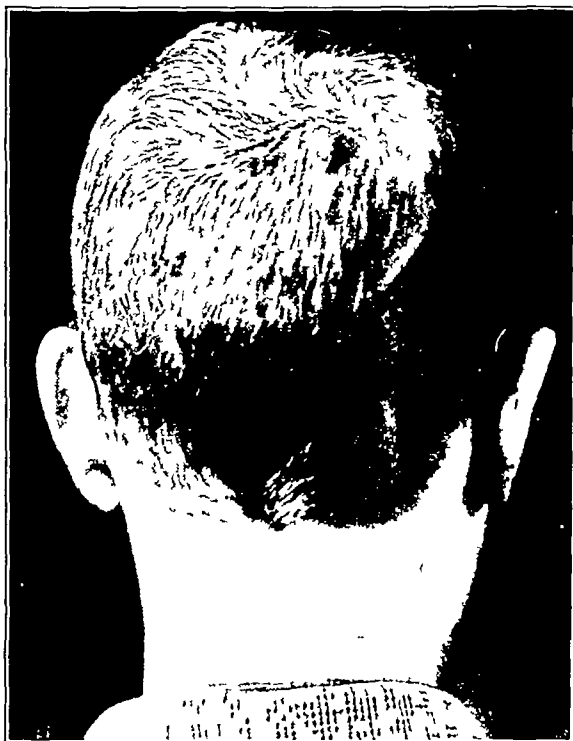


Fig. 5 (Case 5)—Appearance of scalp and neck one month after application of roentgen ray to the gland bearing areas; no topical applications in the interval.

10 Stokes, J. H. in discussion on Hartzell, M. B. Lupus Erythematosus and Focal Infection. Arch. Dermat. & Syph. 2: 445-446 (Oct.) 1920.

11 Engman, M. F. and McGarry, R. A. The Treatment of Lupus Erythematosus of the Skin by the Intravenous Injection of a "Foreign Protein." J. A. M. A. 67: 1741-1745 (Dec. 9) 1916.

12 Goeckerman, W. H. Is Lupus Erythematosus Due to Tuberculosis? Arch. Dermat. & Syph. 2: 445-446 (Oct.) 1920.

periodically excites explosions in the predisposed and unstable organism. It is, of course, impossible to intimate with any positiveness which infection plays which part. Stokes¹³ suggests the hypothesis that, when septic infection creates the hypersensitiveness, the result of a hematogenous infection by tuberculosis bacilli is a tuberculid, while, when tuberculosis creates the hypersensitiveness, the result of a streptococcal or septic invasion is disseminate lupus erythematosus. In the most recent case under observation, the prominence of the septic aspect was especially conspicuous. The relapse was accompanied by arthritic manifestations and the development of subcutaneous abscesses which could scarcely have been due to tuberculosis, as such. The erythema multiforme-like characteristics of the acute disseminate eruption in certain cases is much more suggestive of streptococcal origin than of tuberculosis, as such.

CASE 4—Disseminate lupus erythematosus. A youth, aged 18, in whom the first patch had occurred three years before, was examined, April 21, 1921. General malaise and occasional night sweats had been noted. Examination revealed the disseminate type of lesions on the cheeks, lips, scalp and fingers and in the mouth, and evidence of severe myocardial change. Persistent albuminuria and leukoplakia (lowest count 1,800 leukocytes) were noted. Guinea-pig inoculations with pus from a subcutaneous abscess were negative for tuberculosis. A remission occurred after rest in bed, treatment of general symptoms and toxic manifestations. The patient appeared to be well nourished, and showed no evidence of skin lesions when he left. He died at his home one month later. He had, of course, not recovered from his myocardial disorders. Necropsy was not performed.

The findings in this case apparently emphasize the septic element rather than the tuberculous in such conditions, and is illustrative of the fatal character of the disease, even after the elimination of cutaneous and general symptoms.

PROGNOSIS AND TREATMENT

The prognosis of true disseminate lupus erythematosus is invariably extremely grave. Four of the patients in this series are already dead. Dermatologists of large experience have difficulty in recalling that patients with this disease accompanied by hyperpyrexial attacks and renal complications survive for any considerable period. In view of this extremely grave prognosis, it is permissible to assume some risk in the therapeutic management of these cases. This risk attaches particularly to the removal of pyogenic foci. The extreme reactivity of these patients may result in the disastrous termination of an attempt to interfere with even a minor focus. The extraction of infected teeth should be performed with the utmost caution, with the patient under a strict hospital regimen, and should not, if avoidable, be attempted during a febrile period. Tonsillectomy should be surrounded with equal precautions. The impulse to explore in the presence of abdominal symptoms should be restrained until the case is thoroughly worked out. Treatment of the nephritis should be symptomatic, and should depend largely on the importance of this element in the combined picture which the patient presents.

Iodoform in tablets coated with phenyl salicylate has been used for a number of years with some degree of success. Jadassohn¹⁴ expresses the opinion that careful nursing and hygiene, complete rest in bed and quinin in large doses by mouth probably represent

the method of choice at the present time. In some instances the response to all measures is absolutely nil and the treatment must be directed toward combating symptomatic indications as they arise. The remarkably high temperature which can be maintained by these patients for days, without remission, is a particularly trying feature. Myocarditis, arthritis, enteritis and nephritis may follow one another or combine in a single case, and yet the patient may survive several attacks before the ultimate fatal issue. Bronchopneumonia is a common terminal condition.

My experience in Case 5 resulted in the development of a method of treatment which, so far as I know, has not been tried or reported. After every measure that we could devise had been employed without results, it occurred to me that the patient might, as in Cases 1 and 2, have tuberculous glands that could not be detected clinically. In view of the very beneficial effect of roentgen-ray irradiation on practically all glandular diseases, I decided to treat this patient very much as if he had Hodgkin's disease, theoretically assuming that the cutaneous lesions were the result of a toxic manifestation in the skin, incidental to tuberculosis of the glands. I hoped that the lesions of the skin might disappear as do leukemids, when roentgen rays are applied to the glands in leukemia or Hodgkin's disease. The result was most striking (Figs 4 and 5). The treatment was repeated in three months. The patient now reports himself in good health, a year following the first irradiation.

CASE 5—Acute disseminate lupus erythematosus of the erythema multiforme type. A man, aged 48, examined July 8, 1921, complained chiefly of burning and itching eruption, sore mouth, diffuse alopecia, marked weakness and loss of appetite. He had had typhoid fever at the age of 21, and rheumatic fever at 26. Examination revealed lesions on the face, neck and hands, of the erythema multiforme type of acute lupus erythematosus. There were maceration and exfoliation of the oral mucous membrane, but there was no distinct bulla, and almost total alopecia of the diffuse type. The urine contained a moderate amount of albumin. The patient was emaciated and exhausted. A severe reaction in the form of arthritis, myositis and stupor followed extraction of one tooth. Various local applications, including superficial roentgen ray, to the lesions were of no value, and no definite improvement followed rest in bed with quinin. Neoarsphenamin aggravated the condition. One dose of filtered roentgen ray was applied to the gland-bearing regions, the next day the patient was better, and had rested at night with less itching and burning of the skin, and less soreness in the mouth. His appetite returned. Six weeks later there was a thick growth of hair on the scalp, and little evidence of the former cutaneous lesions. The patient had gained 25 pounds (11.3 kg). One year later he was well and working (Figs 4 and 5).

This patient did not respond to the usual methods of treatment, but the application of filtered roentgen ray to the gland-bearing areas caused prompt improvement of all symptoms.

Whether the excellent therapeutic response can be attributed solely to the effect of the roentgen rays on the glands must for the present remain doubtful, since the method must have further trial before its value can be predicted. The exact mechanism of the effect of the rays also remains obscure. In view of the deep-seated nature of the process, permanent cure is, perhaps, too much to expect.

Other patients with lupus erythematosus have been treated in the same manner, and will form the subject of a separate report.

¹³ Stokes J H. Personal communication to the author.

¹⁴ Jadassohn J. Lupus erythematosus. Handbuch der Hautkrankheiten herausgegeben von Prof F Mrazek. Vienna. Holder 3 298-424 1904.

CONCLUSIONS

1 The clinician should become better acquainted with the systemic symptoms of disseminate lupus erythematosus

2 Any cutaneous lesion associated with a history of fever and vague abdominal complaints should be exactly diagnosed, even though it appears to be trivial

3 Lupus erythematosus disseminatus must be distinguished from pellagra, erythema multiforme, erysipelas, dermatitis venenata, eczema, lichen planus, typhoid fever, pneumonia, rheumatism, septicemia and septic endocarditis, and from all diseases presenting vague abdominal symptoms, such as chronic cholecystitis, chronic appendicitis, colitis, and gastric and duodenal ulcers

4 Renal disturbances, sometimes of a severe type, may be present in this disease, and other symptoms may be inconspicuous

5 The prognosis of the disease is grave

6 Tuberculous adenitis is so commonly associated with disseminate lupus erythematosus that it seems to play some part in its cause

7 An extensive tuberculous adenitis may be demonstrated at necropsy, even though the most careful clinical search, including operative abdominal exploration, has failed to disclose it during life

8 The sensitiveness of these patients to irritants in general and to the removal of foci of infection in particular is very striking

9 Foci of septic infection should be removed with the greatest caution

10 Tuberculin should not be used subcutaneously, either for diagnostic or for therapeutic purposes

11 The extreme reactivity to the removal of pyogenic foci suggests an allergic phenomenon and not the ordinary response to surgical trauma

12 Roentgen-ray therapy, directed to the deeper glands after all pyogenic foci had been removed, resulted in striking improvement in one of the patients

VERY HIGH BLOOD PRESSURE AND
CONGENITAL HEART DISEASE

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The types of congenital heart lesion encountered in adult life, for instance, around the age of 40, are of two kinds. The typical congenital heart lesion, with the enormous enlargement in the region of the conus and the marked thrill in the pulmonary region, accompanied by loud systolic bruit heard over all the chest, is usually seen by many physicians, and is recognized by nearly all. There is another type of congenital heart disease that is much more obscure and the existence of which some people doubt. We find in some of these cases, a very high blood pressure, with a right ventricular preponderance. In these, no definite inference can be drawn from what is heard on auscultation.

When a person with a blood pressure of 240 or thereabouts gives a history of many years of circulatory difficulty, we should expect to find with our fluoroscope a very large left ventricle and the usual picture of long standing cardiovascular renal disease. In the type of congenital heart disease to which I refer, there is no important renal involvement. The heart structure

occupies the center of the chest, and is usually elongated. There is a suggestion of prominence in the region of the pulmonary artery. I have come to the conclusion that it represents a late stage of infantile heart and that the high blood pressure is a systemic compensatory blood pressure relating to the high blood pressure in the pulmonary circuit.

One person presenting this syndrome had been the subject of most elaborate observations in various institutions and resorts, and had been much frightened by uniformly bad prognosis. Since his condition has been recognized as a physiologic variation of a type of congenital origin, this man has lived comfortably for several years. Up to the present time, he has been on a regimen planned chiefly to maintain his general muscular strength. His blood pressure has not varied, always registering from 240 to 260. He has a son with a heart of the same type.



Fig 1—Outline of heart as revealed by the orthodiagram. The heart is not enlarged as would be expected with high blood pressure.

In the infinite number of human beings, a variation in type of structure of the circulatory system is reasonably to be expected. I am convinced that there is such a variation in type involving a right predominance and, that, later in life, a higher blood pressure usually appears, without any definite disease. It is not a common type.

In a practice devoted exclusively to cardiac disease, these patients appear now and then. They present, in different degrees: (1) a very high blood pressure in a person with none of the usual causes, such as defective kidneys or hardening of the arteries, (2) an anomalous finding in the orthodiagram and electrocardiogram, and (3) a remarkably slight inconvenience from the very high blood pressure, e.g., 230.

I have spoken of this condition once or twice although my experience with it is extremely limited.

REPORT OF CASES

Miss A. P. M. was seen by me in consultation and I suggested a probable congenital lesion of the heart giving the opinion that the high blood pressure was due to that and no other disease. I predicted that the orthodiagram and al-

the electrocardiogram would be anomalous, and that the electrocardiogram would show right preponderance. The prediction of the right preponderance in a patient with a blood pressure of 230 was a fairly bold venture. Subsequent technical examination confirmed my prediction.

The patient, when first seen by me, was sick in bed, complaining of marked shortness of breath and nervousness. She had severe headache and palpitation. She had been in bed with this complaint for two weeks, without improvement.

Five years previously, there had been a similar attack, which kept her in bed for six weeks, but between these two attacks she had been able to go about, with little discomfort. She was told that she had a high blood pressure and a disease of the heart valve. The present attack, she thought, was brought on by a period of overwork and nervousness. Her physician had been giving her digitalis, which on my recommendation was stopped, and she was put on bromids, given three times a day. She improved under this treatment, and was able to come in to my office a month later, at which time the orthodiagram (Fig 1) and the electrocardiogram (Fig 2) were taken. The heart was only a little enlarged, and there was a harsh systolic murmur on the apex and all over the heart, loudest at the aortic area. The aortic second sound was markedly increased. The blood pressure was 235 systolic, but 130 diastolic. The pulse rate was 90 and irregular, owing to sinus arrhythmia and premature beats, as the electrocardiogram showed.

COMMENT

The importance of recognizing the condition lies in the fact that the patient must not be treated as an invalid, but must be allowed to lead a normal life, as far as her strength goes. The benefit of this treat-

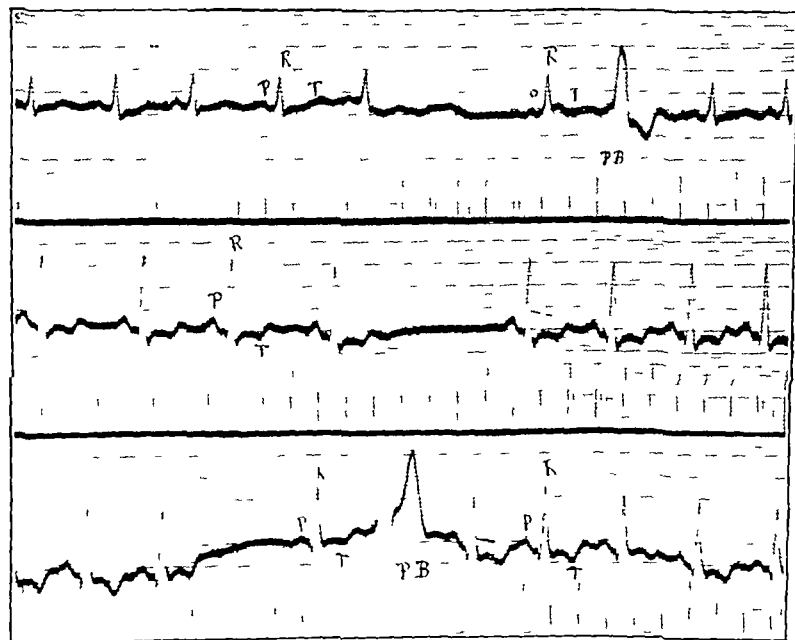


Fig 2—Sinus irregularity denoted by long pauses between some of the beats sometimes as long as 1.40 seconds and the frequent variations in the intervals between the other beats. Ventricular premature beats starting from the left ventricle are present after some of the long pauses. They are marked *PB* in Leads 1 and 3.

ment was evident in an improvement as soon as a rational plan of living was instigated and the fear of heart failure was put aside.

109 East Sixth-First Street

Typhoid Fever in World War—There was less than one case of typhoid fever during the World War to each 94 cases during the Civil War, and to each 140 cases during the Spanish-American War and Philippine Insurrection—(A. G. Love, *Military Surgeon* August, 1922)

Clinical Notes, Suggestions, and New Instruments

RETICULAR KERATITIS. REPORT OF A CASE

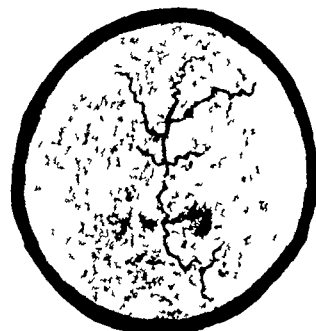
ELTON S. OSBORNE, M.D., SAVANNAH, GA.

In the case here reported, the malarial parasite appears to be the etiologic factor.

A young man, seen in November, who had been working at his trade as a carpenter for several months in various small towns situated near the Savannah River swamps, a malarial section, had had chills and fever, in September, for which he took quinin. Whenever treatment was stopped, the symptoms reappeared, this continuing for two months.

Two days before I saw him, he was driving an automobile in the country, and he thought a foreign body had entered the left eye, which suddenly became painful and inflamed, rendering sleep impossible. Examination revealed the conjunctiva of the left eye inflamed, and there was pericorneal injection.

There were raised ridges on the corneal surface, having the shape shown in the illustration, the epithelium of which was raised above the corneal level, but there was no denuding of the surface. There was no staining with fluorescein.



Ophthalmoscopic appearance of reticular keratitis.

The attack lasted more than a week, when the eye returned to normal, developing normal vision, although the vision in the affected eye had been limited to counting fingers during the attack.

The family history was negative. The patient had had only the diseases of childhood, and no previous eye trouble. His appearance indicated that he had lost weight, and he stated that he was 10 pounds (4.5 kg) underweight. The skin was sallow, with an icteroid tinge, and there was an herpetic eruption on the lips. Ears, teeth and tonsils were negative. The pupils were equal, responding to light and accommodation, and there was no nystagmus. Ocular movements were normal. There was a yellowish tint and injection of the ocular conjunctiva, and pericorneal injection. Ocular tension by a McLean tonometer was 16. The cervical glands and thyroid were not enlarged.

The lungs were normal. The pulse was 101, the blood pressure, 110 systolic, 84 diastolic. The heart was regular and there were no murmurs. The abdomen and external genitalia were negative. The prostate was normal and was not tender, and there was no discharge on stripping.

The malarial parasite present in the blood was probably quartan. The Wassermann reaction was negative. The urine was scant and highly colored. Specific gravity was 1.030. There was no albumin or sugar.

It would appear that the etiologic factor was the malarial parasite. There had been months, during which treatment with insufficient dosage or the administration of quinin for an insufficient period to destroy the parasite.

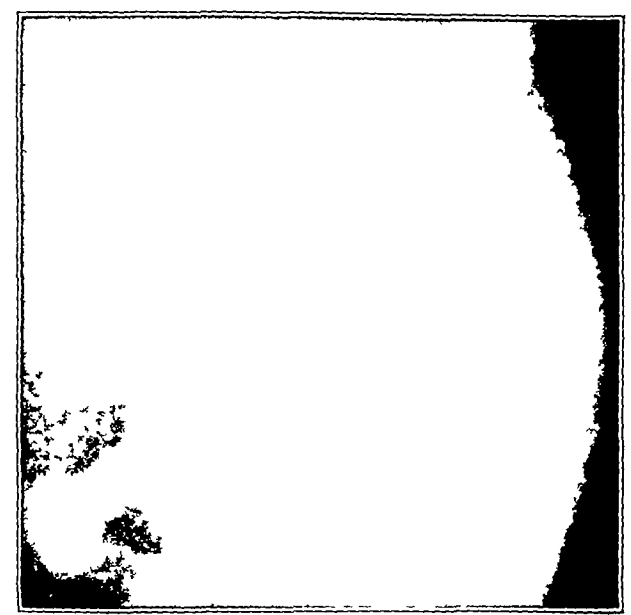
is still maintained. The only local treatment was atropin instillations, and the patient was told to wear dark glasses.

19 East Jones Street

TRAUMATIC LUXATION OF THE HIP IN CHILDHOOD
REPORT OF CASE

DOUGLAS P. MURPHY, M.D., RUTHERFORDTON, N. C.

Hip joint dislocation of traumatic origin in children is rare. When this joint is subjected to undue strain, fracture is the rule in childhood.



Traumatic dislocation of the left hip in a child 8 years old

Maffei¹ found only forty-nine cases reported in the literature to which he added three from a series of 1,842 luxations occurring over a period of twenty-one years at the Rizzoli Institute of Bologna. Maffei noted that the posterior luxation was most common, posterior iliac luxation occurring in thirty-three and posterior ischiatic in six cases. Of the anterior two were suprapubic, one was iliopectoral, and six were obturator. In one case the type was not given. Thirty-seven occurred in males, and eleven in females. The left hip was injured in twenty-two cases and the right in seventeen.

Of Maffei's own cases, two were posterior iliac of the left leg and one anterior suprapubic of the right leg. All were operatively reduced and were cured. Of the cases recorded in the literature, spontaneous reduction was affected in only one.

REPORT OF CASE

The case here reported is presented because of the rarity of this accident in childhood.

G. C., a boy, aged 8 years, was struck Dec. 25, 1922, by an automobile while he was bending over to pick up something. He was brought to the hospital a few minutes after the accident. He had been bleeding at the nose. He was quite excited and complained of pain in the region of the left hip which was increased on motion. The left eye was closed and the lid was discolored and edematous. There was a slight laceration of the lower lip. The left leg appeared shortened and was flexed somewhat at the hip and at the knee. It was rotated inward and motion was limited laterally and in extension. The head of the femur could be felt prominently above and behind its normal position.

¹ Maffei, F. Contributo alla conoscenza della lussazione dell'anca nell'infanzia. *Chir. d. Org. d. Fem.* 6 (1912) reviewed by Brennan. *Internat. Abstr. Surg.* January 1913.

Posterior iliac luxation of the left femur was diagnosed with slight concussion of the brain and slight laceration of the lower lip. The diagnosis of posterior luxation was confirmed by roentgen ray examination, as shown in the accompanying illustration.

The head of the femur was easily returned to its normal position, under light ether anesthesia, without resort to open operation.

SUMMARY

- 1 Traumatic dislocation of the hip joint in childhood is rare.
- 2 Males are more frequently affected than females.
- 3 Posterior luxation is the commonest form.
- 4 The left hip is affected slightly more often than the right.
- 5 Operative interference is frequently necessary.

FIBROMA OF STOMACH

J. R. COOPER, M.D., NEW CASTLE, PA.

On account of the rare occurrence of fibroid tumors in the stomach I thought it would be interesting to report this case. In fact, I have been unable to find any reference to it in the literature I have at hand.

History.—A business man, aged 45, married, was referred to me in September, 1921, by Dr. F. F. Urey for a roentgen-ray examination to determine, if possible, the cause of hemorrhages he was having from the stomach and bowels. About two years before, the patient at times became dizzy and his stools after these spells were dark and of a tarry consistency. He consulted a number of physicians, but none of them were able to discover the real cause of his trouble. In 1920 his dizzy spells became more pronounced, and he occasionally vomited blood in considerable quantities. His condition then was thought to be ulcer of the stomach or duodenum, but no ulcer history could be secured except the hemorrhages. There was no pain or tenderness before or after eating, his appetite was generally good, and there was no loss of weight. The skin and the general appearance were normal.

Roentgen-Ray Findings.—On making the preliminary fluoroscopic survey before giving the opaque meal, I noticed extending into the gas bubble of the stomach a tumor-like mass about as large as a medium sized orange. It was



Tumor in cardiac end of stomach extending into the gas bubble

observed to rise and fall with respiration and no pulsation could be seen. The tumor had the appearance of a piece of a heart, as seen to be distinct from the organ. It is thin could be felt on the right posterior held his breath after a medium full inspiration. I felt that he would also with a benign neoplasm as the history of the tumor would rule out malignancy of the stomach. The abdominal exam. was negative. The patient was

was ruled out. To me it resembled a polyp. I then gave the patient a barium meal, but no evidence of ulcer of the stomach or duodenum could be found, and the peristalsis was normal. With the stomach filled with the barium mixture, the tumor could not be seen.

Operation and Result—In June, 1922, the patient had had a severe attack of dizziness, and vomited a large quantity of blood; he also had passed considerable blood by the bowels. He had been advised at the time of the discovery of the tumor to have it removed, but, as his health was good, he did not heed the advice until this attack, when, becoming alarmed, he went to Rochester, Minn., and was operated on by Dr. Charles Mayo, July 18, 1922. Dr. Mayo wrote me:

"I operated on Mr. H., July 18, 1922, excising a fibromyoma the size of an apple in the cardiac end of the stomach. The tumor was growing from the anterior wall about 1½ inches from the cardia, and I removed it with its base. The opening was closed with two rows of chromic catgut. The pathologic report was fibromyoma with a large ulcer on the mucous surface. This condition is quite a rare one."

The patient is now in perfect health, with no return of his former symptoms.

111 East North Street

CARCINOMA OF THE STOMACH. REPORT OF CASE AND EXAMINATION EIGHTEEN YEARS AFTER OPERATION.*

JOHN DUDLEY DUNHAM, A. B., M. D., COLUMBUS, OHIO
Assistant Professor of Medicine, Ohio State University
College of Medicine

History—A man, aged 52, an ice dealer, consulted me in July, 1904, for a gastric complaint. The family history was negative, none of his people having died of tuberculosis or malignant disease. He himself had had the diseases of childhood, but no other diseases, and stated that he had never had venereal infection. He was not addicted to the use of tobacco or alcohol.

The illness for which he consulted me began in January, 1904, when the ingestion of food was followed by eructations of gas and sour fluid. Coincident with this was a loss of appetite and inability to perform heavy work. The family physician administered some artificial digestants and regulated the diet, but without benefit. For the preceding four weeks he had occasionally vomited sour, undigested food, but never blood, nor had he observed dark stools. There was no definite history of pain after food.

Examination—The skin was sallow and the conjunctivae pale. The weight before the beginning of his illness was 175 pounds (79 kg.), and was now 130 pounds (59 kg.). The tongue had a whitish coating. The chest showed normal conditions. There was a small, indefinite, movable tumor to the left of the median line in the epigastrium. The stomach appeared to occupy its usual position. The liver and spleen were normal. An examination of the blood showed a hemoglobin percentage of 50 by the von Fleischl method, a secondary anemia with an increase of leukocytes was shown by stained specimens. The urine was normal. The stomach contents, one hour after an Ewald test meal, showed an absence of free hydrochloric acid and the presence of lactic acid. Food fragments from a meal of the previous night were found. The guaiac test was positive.

Treatment and Course—A diagnosis of cancer of the stomach was made, and the patient was advised to consult a surgeon without delay, for the purpose of having an exploratory operation performed. This advice was rejected by the patient, who was under the care of another physician, receiving medical treatment from July to Dec. 18, 1904. On the latter date five months after a diagnosis had been made, he entered Mount Carmel Hospital in the service of Drs. W. D. Hamilton and C. S. Hamilton. The patient had become markedly anemic and sallow in appearance. He had recently vomited coffee-ground material and had suffered a consider-

able loss of strength. His weight was 126 pounds (57 kg.). In the epigastrium was a tumor the size of a lemon, quite sensitive to the touch, so that its physical characteristics could not be determined. The hemoglobin was 40 per cent, and there was present a marked secondary anemia.

Dr. C. S. Hamilton operated on the patient, Dec. 22, 1904. The two surgeons reported the stomach to be the seat of a tumor extending from the region of the pylorus along the lesser curvature to its middle. The growth partially closed the pylorus, involving the peritoneum on the anterior gastric wall. Subtotal gastrectomy was performed after the Mayo method, 1 inch of the duodenum being removed, and a posterior gastro-enterostomy with Robson bobbin was done.

Pathologic Examination—The portion of the pyloric end of the stomach removed measured 12 by 9 by 3 cm. The anterior surface was irregular, extending for a distance of 7 cm. toward the cardiac end. The omentum was attached to this thickened mass. Posteriorly, the surface was smoother, the thickening extending down 5 cm. from the lesser curvature. A hard, irregular, indurated mass occupied the wall of the stomach, except the lower posterior portion, along which was an apparently uninvaded strip. The inner surface was reddened and injected. Erosions and ulcerations were noted. The mucosa could be made out only in the free area.

The photomicrographs¹ and the histologic report were made by Dr. James McIlvaine Phillips, who found the specimen to consist of an irregular block of white tissue, previously fixed and hardened, and brought to the laboratory in alcohol. The block was an irregular mass about 3 cm. long, 1.5 cm. thick and 2 cm. wide. One surface resembled thickened and irregular mucous membrane, the other serous membrane. The mass of tissue was cut into blocks of suitable size, embedded in celloidin, and these blocks so oriented that sections cut from them extended from the mucous to the serous surfaces. Sections were then stained in hematoxylin and eosin and, for photography, in alum carmin.

The sections took the stain poorly. The tubular glands in the thickened mucous membrane were enlarged and irregular. In their more superficial portions, the cylindric epithelium lining them consisted mostly of a single layer. In their deeper portions there were several layers, and in some tubules the cells entirely filled the lumen. A few of the tubules were cystic. In many of the tubules the thickened layer of cells lining them infiltrated directly into the surrounding tissue. The epithelial cells were large, and many of them swollen and hazy, being transformed into a material which resembled mucus in staining reaction. The submucosa was thickened and infiltrated with round cells and leukocytes. In places, irregular islands of epithelial cells were seen.

The muscular coats had almost entirely disappeared, and were replaced by masses of epithelial cells, the nuclei in many of which showed karyokinetic changes. Some of these cells contained two or more nuclei. The masses of cells were separated from one another by a very coarse mesh network of fine, loose connective tissue fibers. Very delicate capillary blood vessels were seen in these strands, but none were found among the epithelial cells. Here and there large islands or strands of connective tissue and atrophic involuntary muscle were seen.

The diagnosis carcinoma of the encephaloid type, was confirmed by Dr. Francis Carter Wood of New York.

Following operation, the patient had a stormy convalescence, but slowly and steadily improved.

Later Examination—Dec. 4, 1922, the patient, aged 71, appeared healthy, and his digestion was perfect. He ate six times daily, indulging in all varieties of food. The only abnormality noted was occasioned by a feeling of hunger.

CONCLUSION

This case is reported as a plea for more frequent gastrectomy for cancer of the stomach. The patient has everything to gain and nothing to lose by such a procedure.

Probably very few patients have lived eighteen years after an operation for carcinoma of the stomach.

327 East State Street

* From the Department of Medicine, Ohio State University College of Medicine.

¹ These were reproduced by Dunham, J. D., New York, M. J. 84, 218 (Aug. 4), 1906.

THE INTRAGASTRIC DETERMINATION OF ACIDITY BY
MEANS OF THE CELLULOID CAPSULE

JACOB BUCKSTEIN M D NEW YORK

Consultant in Gastro-Enterology U S Veterans Bureau

While there may be variations of opinion as to the practical significance of exact quantitative determinations of the acid values of the gastric contents, there can be no doubt as to the value of a qualitative determination of the presence or complete absence of gastric acidity. The absence of free hydrochloric acid may signify malignancy, a marked atrophic gastritis, a benign achylia or complete neutralization with alkalis.

Although the determination of an acidity is thus of great practical value, there are times when the introduction of the stomach tube is not desirable. 1 When a penetrating ulcer is present, the gagging and vomiting occasionally produced by the introduction of the tube may produce a perforation. When an associated malignancy is suspected, one may nevertheless wish to know whether free hydrochloric acid is present or not. 2 In marked asthenia, or when a cardiac complication is present, as well as in the highly neurotic type of individual, the introduction of the tube may be considered undesirable.

In order to avoid the use of the tube in those cases in which its use is contraindicated or undesirable, I have employed the following simple direct method for the qualitative determination of free hydrochloric acid. I employ the small transparent, indigestible celluloid capsule (size 0 or 00), as previously described.¹ These capsules may be obtained from the Collapsule Company, 122 Hudson Street New York. A string about 30 inches long is attached to one end. Within the capsule is placed a small strip of Congo red paper. The capsule is then closed. Holes for the communication of fluid are then made by passing a moderately heated hairpin through the coapting surfaces. This small capsule is swallowed for a distance of about 24 inches from the teeth. This will carry the celluloid capsule well within the gastric contents. After several minutes, the capsule is removed. The contained Congo red paper will have turned blue, in the presence of free hydrochloric acid.

With a minimum of discomfort to the patient, this simple intragastric, celluloid capsule method enables us to obtain evidence of real practical value.

1 West Eighty-Fifth Street

ATRESIA OF THE NIPPLES

O B SHEETS M D CARTHAGE S D

I have been unable to find any reference in literature to congenital occlusion of the lacteal openings, and therefore report a case in a primipara, aged 33, whose breasts and nipples showed no apparent abnormality.

Mrs T W gave birth to a strong, vigorous boy of 8 pounds (36 kg). The puerperium, and the labor, was uneventful except at the beginning of the third day, when she began to complain of her breasts. Examination disclosed them to be tender to touch, and moderately engorged. The pulse and temperature were normal. At this time the baby became fussy, and at feeding intervals would nurse ravenously with no apparent satisfaction. On the fourth day the mother complained bitterly at these nursing periods and a second examination revealed the breasts to be very large, tense and painful. There was no local heat or infiltration. The temperature remained normal, the pulse became slightly accelerated. The condition being one of extreme engorgement, effort was made to relieve the breasts, first by expression then by pumping, with the rubber bulb and the vacuum pump breast pumps, and finally by having the husband suckle the breasts. None of these methods gave any lacteal secretion. As the trouble seemed to be wholly with the nipples, the breasts were punctured under surgical precautions through the nipples with a 28 gage hypodermic needle on an aspirator and a quantity of milk was secured. Before the breasts were emptied, two more

openings were made, or three through each nipple, each being located with a staining agent. With the third puncture the breast was partially relieved, and the baby applied, with apparent satisfaction to himself and alleviation to the mother. Subsequently these apertures were probed with a No 1 Bowman probe previous to each nursing for the first thirty-six hours, then less often, with a gradual increase in the size of the probe up to a No 6 Bowman, thereby securing free lacteal orifices by the end of the fifth day of treatment.

Special Article

THE CARE AND FEEDING OF
INFANTS

(Continued from page 475)

[NOTE.—This is the eighth of a series of articles on the care and feeding of infants. It is addressed to the general practitioner rather than to the pediatric specialist. When completed, the series, somewhat elaborated, will be reprinted in book form.—Ed.]

GOAT'S MILK

Goat's milk is pure white, without especially pronounced odor or taste. There may be a peculiar "goaty" taste and unpleasant odor to the milk, but this can be entirely avoided if the milk is properly produced and handled, that is, by preventing manurial pollution, by keeping male goats out of and away from the stable in which the milking is done, and by taking precautions to keep the udder clean.

There is no essential chemical difference between the constitution of goat's milk, casein and that of cow's milk.¹⁹ The casein coagulum forms a more compact, firm mass than does that of the bovine.

Because of the similar chemical composition, goat's milk may be modified, like cow's milk, for infant feeding.²⁰ The protein content is considerably higher than in human milk, the sugar considerably less. The fat varies from 2.5 to 7.5 per cent,²¹ generally a little higher than that in cow's milk. The butter fat is white, there being a minimum of pigment.²² The fat rather closely resembles the fat in human milk. The fat globules are relatively small, in very fine droplets,²³ and of uniform size. Ninety per cent of the fat globules of cow's milk are over 4 microns in diameter, in goat's milk only about 10 per cent are over 4 microns, and often 50 per cent are under 2 microns.

The fat globules rise slowly, and in most cases no cream layer is formed. The cream is separated with difficulty by centrifuging,²⁴ but may be thoroughly separated in a cream separator. Goat's milk fat is richer in insoluble volatile acids than cow's milk fat, but, on the whole, there is very little difference when the chemical composition of the two fats is compared.²⁵

In regard to the salt content, goat's milk differs²⁶ from cow's in containing tricalcium phosphate, dimagnesium and trimagnesium phosphate, monopotassium phosphate, and no monomagnesium or dipotassium phosphates. Human milk contains no insoluble phosphates. Goat's and cow's milk contain more phosphorus

19 Calvin J K Arch Pediat 38 584 (Sept.) 1921

20 Griffith Diseases of Infancy and Childhood 1 169 1919

21 Vieth Milchztg 14 449 1885

22 Schaffer Schweiz Milchztg 1 Ph

23 Barbellion Verhandel f

24 Heineman P G Milk

1920

25 Solberg Jahrb f Th

26 Bosworth and Van S

1916

any

1 Buckstein Jacob Direct Determination of Lipase Within the Small Intestine J A M A 79 1766-1767 (Nov 18) 1922

than human milk. There are more chlorids in goat's than in human or in cow's milk. The different salts appear to be greatest in number in goat's and least in human milk. McLean²⁷ asserts that goat's milk contains more iron than cow's milk.

Yield—In proportion to its body weight, the goat produces about twice as much milk as the cow. The goat may yield from ten to twelve or even fifteen times its body weight in milk yearly, while a cow yields five or six times its weight.²⁸ By good feeding, 800 kg or more (from 600 to 1,100 liters) of milk may be obtained in a year. A year-old goat will produce from 300 to 700 liters a year.²⁹ Goats usually provide milk about six months out of a year, and a lactation period ranging from seven to ten months is considered very satisfactory. A good scrub or common goat will yield about 2 quarts (liters) of milk a day,³⁰ and a production of 3 quarts a day is considered excellent. However, a good grade Toggenburg will produce from 3 to 4 quarts, and some pure-bred Toggenburgs will run from 5 to 7 quarts a day.

If goat's milk is aseptically obtained, it is the most suitable substitute for breast milk, since it has not been exposed to the possibility of changes, has not lost its natural properties, and can be given raw.

Another advantage of goat's milk is that it cannot be skinned, as the cream does not form a distinct layer.³¹

Goats are practically immune to tuberculosis.³² Only from 0.4 to 0.6 per cent of the goats in Prussia gave a positive reaction for tuberculosis.³⁴ The question of the transmission of a passive immunity to tuberculosis by the transfer of natural antibodies from goat's milk to very young infants, or from the use of this milk over a much longer period, is now being investigated. At present the results are incomplete.

From some very limited data it might appear that goat's milk is considerably higher in antiscorbutic properties than cow's milk. Moore states that six guinea-pigs weighing from 110 to 145 gm each were fed on fresh goat's milk, one set for eighty days, a second for forty-four days. The animals developed normally with no clinical symptoms of scurvy, although similar experiments with cow's milk resulted in scurvy.

CERTIFIED MILK

The term "certified milk" should be limited to milk produced in accordance with the requirements of the American Association of Medical Milk Commissions.³³ The expressed desire of the dairyman to contract to produce clean milk is far from sufficient for public protection. Only by periodic inspection by representatives of the local authorities, such as city, state or special commissioners, can a supply of wholesome milk be continuously assured. Sanitary stables and proper handling of the cows, with milking into sterilized receptacles are prime essentials. The cows must be in good health, free from tuberculosis and other infectious diseases. All persons coming in contact with the milk must exercise scrupulous cleanliness and must be free from infections which might be conveyed to others through the milk. All of these precautions can be nullified by carelessness in handling the milk, either

at the farm, during transportation or in the home. Certified milk must have a minimum bacterial content, and should never be more than thirty-six hours old when delivered.

Certification must be denied all milks having, on repeated examination, a bacterial count exceeding 10,000 per cubic centimeter. Such examination should be made at least once a week. Of even greater importance than the number are the types of bacteria found in the milk. The milk from all sick cattle and those with open wounds must be excluded. Employees suffering from infectious diseases which may contaminate the milk must be quarantined, and if contagious diseases occur on the premises of a certified dairy, the customers should be notified so that the milk may be sterilized in the home if the commission shall deem it wise to allow the milk to be delivered. In case of doubt, the dairy should be temporarily stopped from further deliveries. The milk must be cooled immediately after being secured, and maintained at a temperature between 35 and 40 F until delivered.

Many good milks are spoiled on the door-step of the home between the time of delivery and of placing the milk in the icebox. All the utensils and vessels used for preparing the mixture must be clean and sterilized by boiling. As soon as the mixture is prepared, it should be put into the icebox again and kept there, preferably in individual bottles containing single feedings.

PASTEURIZED MILK

Pasteurization is accomplished by heating milk for a definite length of time, varying according to the temperature to which the milk is heated. The "holding method" whereby the milk is heated to not less than from 140 to 150 F, (60 to 65 C) and is kept at this temperature for at least twenty minutes, is probably the most efficient for commercial purposes. Pasteurization in the home is well accomplished by one of several simple pasteurizers obtainable in the market. Similar results may be obtained by placing milk in the inner vessel of a double boiler with cold water in the outer vessel. The water is then heated to 160 F, and the milk is allowed to stand in its receptacle in a warm place for twenty minutes, following which it is rapidly cooled in a good icechest, where it should be kept until the time for reheating at feeding periods. If a similar method is desired for pasteurization in individual bottles, they should be placed in a pail, and water added to a level above the milk contained in the bottles, after which the water is heated to 160 F. The pail is then removed from the stove, covered, and kept in a warm place for one-half hour, after which the milk is to be rapidly cooled in a good icebox. It should be remembered that the bottles must be properly stoppered.

Scalded Milk—The milk is heated in an open vessel until it bubbles around the edges and steams in the center. By this means it is heated to temperatures varying from 165 to 185 F. Scalding is not boiling.

Boiled Milk—Milk may be boiled in either a single or a double boiler. With a single boiler, the milk is heated to the boiling point and allowed to boil from three to five minutes, with constant stirring. With a double boiler, the milk mixture in the inner and cold water in the outer vessel, the water is brought to the boiling point and kept boiling for from six to eight minutes, the whole process requires from ten to twenty minutes. Following the heating, cold water should be substituted in the outer vessel, and should be renewed several times until the milk cools. The milk is then

27 McLean *Ztschr f Kinderh Orig* 4 168 1912
28 Fleischman *Lehrbuch der Milchwirtschaft* 2 65 1898
29 Kohlschmidt *Jahrb f Thierchem* 30 254 1901
30 Rosenau *The Milk Question* New York Houghton Mifflin Company 1912
31 Kochen *Steinberger Milchztg* 27 356 1898
32 Richter *Berl klin Wchnschr* 1888 No 18
33 The standards are given in the literature of the American Association of Medical Milk Commissions

put in small sterilized bottles for individual feedings, or in one large bottle, capped, and placed on ice. While milk heated in a double boiler forms a much finer and softer curd than that of raw milk, it is not so fine as the milk boiled directly over the flame. It does, however, answer the needs in most cases, and, because of the simplicity of the method, is preferable.

RAW MILK VERSUS HEATED MILK

Whatever opinion one may have as to the advisability of recommending heated milk rather than raw milk for infant feeding as a general practice, it must be recognized that the earlier teaching in America concerning raw milk feeding led to the production of certified milk, with a resulting decrease in infant mortality. However, it should be emphasized that any method of food preparation which may tend toward an erroneous feeling of security is to be avoided. This applies particularly to milk production, as it is obvious that unclean milk cannot be considered a safe food for infants, even though it is pasteurized or boiled.

Raw Milk—In large communities, certified milk from properly inspected dairies is the only milk which may be fed raw with any feeling of safety. During the warm months, even certified milk should be pasteurized or boiled in the home. In small communities, when the milk has been produced under sanitary conditions and reaches the home a few hours after milking, it may be safely used. When there is any doubt as to the quality of the milk, it should be heated.

PASTEURIZATION VERSUS BOILING

The ardent advocates of pasteurization claim that it is essentially a raw milk, so far as concerns its physiologic properties. Our experimental studies have shown that when milk is allowed to stand for some time after pasteurization, even though the vitamins are not completely destroyed, its antiscorbutic value is less than that of fresh raw milk. Therefore the relation of the time of pasteurization to the hour of feeding is important. Proper pasteurization destroys most organisms except the spore bearers. Fortunately, this includes the majority of the ordinary pathogenic bacteria. One disadvantage is that most of the lactic acid-producing bacteria are destroyed, and, therefore, the milk fails to sour, or sours less readily than unheated milk. This may give the mother a false feeling of security. In most instances, however, some of the lactic acid-producing organisms, having a high thermal death point, survive the heating and thereby lead to souring in old milk. While commercial pasteurization, therefore, has its disadvantages, on the whole its use has accomplished much in the lowering of infant mortality.

Boiling in the Home—This has the great advantage over commercial pasteurization in that if the raw milk has soured before it reaches the home, the housewife can readily detect it. However, it is to be remembered that many pathogenic organisms may develop in milk without giving any evidence of their presence, and, while the organisms themselves are in most instances destroyed by boiling, their toxic products are not thus removed.

The small flocculent curd of boiled milk is more easily digested than the large, tough, casein curds of raw milk. This is of distinct advantage in indigestion and diarrhea and in atrophy, as larger amounts of food and a more highly concentrated mixture can be administered. Boiling, therefore, effectually disposes of the majority of bacteriologic problems, and is an excellent

casein modifier. While some of the lactalbumin is coagulated, small amounts of the sugar are caramelized and some cream and salts are lost in the scum; the advantages of this method outweighs its shortcomings.

In feeding boiled milk to infants, the danger of the development of rickets and scurvy can be positively obviated by the early addition of cod liver oil and orange juice to the diet. A tendency to constipation develops, owing to the more complete digestion of the fine curds in the small intestine and the absence of the large, hard protein curd seen with raw milk feedings, but this can usually be counteracted by adding carbohydrates to the mixture. *Duly considering all these facts, we believe that whenever there is any doubt as to the quality of the milk supply, the method of choice is boiling in the home, preferably by the double boiler. This should also apply to the reboiling of pasteurized milk whenever doubt exists as to its quality.*

FROZEN MILK

Vomiting and not infrequently diarrhea follow the feeding of milk that has been frozen. So far as possible, it is better to avoid the use of milk of this type. As this is not always possible, such milk should be boiled before being used in the feeding mixture. In most instances, the changes are in all probability physical, for in the freezing of the water the emulsion breaks and the fat becomes separated. When the milk is thawed, the fat globules coalesce and form a thick layer of butter fat which may cause a gastric and intestinal upset. Milk that has been frozen is less likely to show changes in the fat emulsion if the process of thawing goes on slowly in a cool room.

Pennington³⁴ and her collaborators also found that changes occurred in the protein of milk that was held for a considerable period at a temperature of 0°C. These changes resulted in proteolysis of the casein and of the lactalbumin.

(To be continued)

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKER, SECRETARY.

DIPHTHERIA TOXIN-ANTITOXIN MIXTURE (See New and Nonofficial Remedies, 1922 p. 282)

Eli Lilly & Company, Indianapolis

Diphtheria Toxin-Antitoxin Mixture Lilly—Each cubic centimeter constitutes a single human dose containing three I. U. dose prepared in accordance with the requirements of the U. S. Public Health Service. Marketed in packages of three vials sufficient for one immunizing treatment, each vial containing 1 Cc. of the toxin-antitoxin mixture.

DIPHTHERIA IMMUNITY TEST (SCHICK TEST) (See New and Nonofficial Remedies, 1922 p. 120)

Eli Lilly & Company, Indianapolis

Schick Test—Marked in package containing one vial of diphtheria toxin sufficient for ten tests and a vial filled with sterile physiological solution of sodium chloride and in packages of ten vials containing toxin sufficient for 100 tests and ten vials filled with sterile physiological solution of sodium chloride. Each dose contains approximately 0.001 Cc. of toxin (0.2 Cc. of the diluted toxin) which is equivalent to 1/40 of a minimum lethal dose for a guinea pig (M.L.D.). As a means of control, the Schick test can be performed using diphtheria toxin of the same lot heated sufficiently to destroy specific exotoxin is applied.

³⁴ Pennington, Herbert W. *Water Supply* Chem. 16: 111, 1913.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, FEBRUARY 24, 1923

THE ACTION OF HYPERTONIC SALT SOLUTION

Human curiosity demands an explanation not only of the customary manifestations of nature but also of the phenomena that can be brought about by artificial means in an empiric way. In medicine, this scientific inquisitiveness is widespread and eminently desirable. Few physicians are content to carry out a therapeutic procedure that is traditionally employed in practice year after year without giving occasional thought to its rationale. With the knowledge of how to secure a result comes the desire to know what causes it and why. A number of American clinicians, impressed by Weed and McKibben's¹ demonstration that the intravenous administration of hypertonic salt solution to animals was attended by a decrease in the size of the brain and a fall in cerebrospinal pressure, have attempted to apply it to clinical practice.² The impression has been created that the effects are often sufficiently satisfactory to warrant the employment of the procedure as a therapeutic measure. It is said that as the result of such injections cerebral hernias often disappeared or were much diminished, the swollen brain decreased in size so that operations on it could be performed more easily, and the elevated cerebrospinal pressure of patients with brain tumor was usually reduced promptly. A recent study of the effect of hypertonic salt solution, administered intravenously to a number of patients with brain tumor who had an increased cerebrospinal pressure, shows that symptomatic improvement occurred in all. This was mainly manifested in the relief of headache and stupor. No harmful effects were observed. It appears likely that the fall in cerebrospinal pressure that follows the intravenous or oral administration of hypertonic salt solution is a volume change dependent on the egress of fluid from the brain to the blood stream.

¹ Weed, L. H. and McKibben, P. S. *Am. J. Physiol.* 48: 512 (May) 1919.
² Cushing, Harvey and Foley, F. B. *Proc. Soc. Exper. Biol. & Med.* 17: 217, 1920. Sachs, Ernest and Balcher, G. W. *The Use of Saturated Salt Solution Intravenously During Intracranial Operations*. J. A. M. A. 75: 60 (Sep. 4) 1920.

The immediate effect of the introduction of hypertonic saline solutions, for example, 100 cc of 15 per cent sodium chlorid solution into the circulation, is the production of a hydremic plethora because of the withdrawal of water from the tissues, the brain being only one of the sites of this diffusion. In a study made at the Massachusetts General Hospital, Barach, Mason and Jones³ have fixed the responsibility for this on the increased chlorids brought by injection into the blood. The body at once responds, in an effort to render the plasma isotonic again, by pouring water into the blood stream until the osmotic equilibrium is attained. The increase in blood volume usually parallels the blood chlorid concentration. The physics of the reaction is what might be anticipated. In the Boston cases the red corpuscles showed no impairment due to the introduction of hypertonic sodium chlorid solution. In one case there was a temporary lessening of fragility. The oxygen-carrying power of the hemoglobin was intact. There was no free hemoglobin spectroscopically, and no increase in bile pigment. The story is another instance of the benevolent devices of physicochemical regulation in the body.

ANEMIA IN CHRONIC NEPHRITIS

Most physicians think of chronic nephritis as essentially a kidney disease, which, in the narrower sense, it is. The prominent symptoms are those immediately attributable to the profound disturbance in the renal functions. The changes in the composition and character of the urine cannot fail to direct attention specifically and emphatically to the kidneys. Structural elements of various sorts are usually present in the secretion of these organs, and the normal constituents of the urine are likely to be diminished in quantity. Retention is a common manifestation. What the etiology factors may be has been the subject of considerable divergence of opinion. The greatest emphasis has probably been placed on toxic agents, such as poisons which bring about a slow chronic intoxication, or products of endogenous origin that may work quite as insidiously and dangerously. Toxins derived from bacterial sources in the organism have been accused, and the severe reactions from exposure to unfavorable environments have not been overlooked in the explanations recorded.⁴

Brown and Roth⁵ recently emphasized that chronic nephritis should be viewed from the standpoint of a constitutional disease. Renal injury is only one phase of this widespread toxic damage. The retinal, cardiac and vascular tissues, and hematopoietic system are also definitely injured. They reached this conclusion from

³ Barach, A. L., Mason, William and Jones, B. P. *The Effect of the Administration of Hypertonic Salt Solution on the Blood Volume and Certain Related Blood Constituents*. *Arch. Int. Med.* 30: 669 (Nov.) 1922.

⁴ A discussion of the subject is given by Strauss, H. *Die Nephritiden*. Berlin: Urban and Schwarzenberg, 1920.

⁵ Brown, G. E. and Roth, G. M. *The Anemia of Chronic Nephritis*. *Arch. Int. Med.* 30: 817 (Dec.) 1922.

a study of the anemia so commonly associated with the disease. According to these investigations of cases in which no blood loss had occurred, excessive hemolysis could not be called on to explain the lack of red cells. The probability thus remains that the anemia attending the renal insufficiency is due to decreased formation of erythrocytes incident to damaged function of the bone marrow. The latter is disturbed in common with other tissues.

As both Brown and Roth view it, accumulating evidence in chronic nephritis points to primary vascular injury of widespread, not merely renal, distribution, and the bone marrow tissues reveal secondary effects of vascular disease. The unknown agent causing renal insufficiency, they add, is probably the etiologic factor in the disturbance of hematopoiesis, in other words, a common cause is present. After repeated injuries to the bone marrow, anemia becomes more severe and takes on certain characteristics of a hypoplastic or aplastic type of anemia. The injury to the bone marrow concerns only its erythrogenic function. Leukocytopoiesis is not involved. It is further pointed out that the latency in the development of the anemia can be explained on the basis of its bone marrow origin. The circulating erythrocytes are not destroyed. Excessive hemolysis is not present. The normal replacement of erythrocytes is slower after injury to the bone marrow. As the circulating cells die and replacement is slow, a lapse of time is natural before anemia is evident.

WAR AND ANATOMY

The *Iliad* and the *Odyssey* have recently been used as an index of anatomic knowledge in Homeric times. Korner¹ has found 147 descriptions of war wounds in the classic tale of high endeavor and protracted suffering resulting from the celebrated triangle that brought the hosts of Agamemnon before the walls of Troy. Special emphasis is laid on perforating wounds, in which the points of entrance or exit are given and intervening injured organs named, in one case, for example, a fleeing ex-combatant intercepted a spear in the upper gluteal region which made its reappearance below "the bone," presumably the os pubis, passing through the bladder. In another instance, a braver but less wise warrior, indiscreet enough to oppose the unmasked Odysseus, received the long suffering one's winged shaft in the breast, the arrow sticking in his liver, a localization signifying to Korner that the epic bard was a good enough topographic anatomist to place the dome of the liver some distance above the costal margin. From such references, Korner feels justified in concluding that Homer's knowledge of anatomy rested on a surer foundation than analogy with slaughtered animals and haphazard observations made in the treatment of war wounds, for spear laparotomies and amputa-

tions do not afford a sufficiently clean and wide field for accurate inspection. He believes, then, that Homer's information must have been based on deliberate dissection by physicians of the day, perhaps by the field surgeons. Fuld² has opposed Körner's conclusion, under the title "*Prähomerische Sektionen*", confident that the human sacrifices of that barbarous time, and the not far distant cannibalism, furnished foundation enough for the meager Homeric details.

To a nonpartisan reader lenient to the vagaries of poetic license, Korner's anxious analysis of certain supposedly erroneous anatomic concepts of the Greek poet seems superfluous. He does not need to be convinced, by a passage locating the godlike Sarpedon's heart correctly in the pericardial sac, that the Achaean confidant of the muse had no intention of situating the liver there likewise in a passage that seems to read to the contrary unless translated with great care. He will be inclined to believe that most of the grosser relations of the human viscera were known to the human at that remote period somewhat as they are today, and without organized dissecting courses or sub rosa necropsies in a period of priestly control and pious regard for the dead. To this knowledge many sources contributed. And after all, not the least of these was battle-field experience. For whatever may have been the effect of theological prescription in checking the mutilation of his fellow citizen in times of peace, no religious considerations restrained the Homeric hero from making mince meat of his enemy in the white heat of passion, if he was able and so desired. Witness the fate of the unfortunate gort-keeper Melanthius, who suffered the loss of his nose, ears, hands, feet and "parts of shame" following his careless underestimation of Odysseus' prowess in the battle in Penelope's hall. Many another hexametered catalogue of horrors could be cited.

Although a more generous spirit regarding the dissemination of knowledge may prevail today, it is unlikely that curiosity concerning anything so close to a savage's happiness as his own body could remain restrained through the long centuries before the Renaissance swept aside fear and hide-bound convention, and fired the intellectuals to blaze new trails. Long before that, when an extensive anatomic material was available some one must have looked at it, and it is not to be doubted that he told a few friends what he found. But with a limited comparative anatomy, in the absence of developed embryology and physiology, knowledge based on understanding was impossible, and anatomy could make but feeble strides. It remained a mere catalogue and must have been of about the same interest. One cannot help thinking of instances of modern seizure of opportunity. For instance, there is on exhibition a product of the war of our civilization where culture offers no bar to minute investigation and where a dozen related sciences contribute to mutual understanding. In Aschoff's Institute of Pathology, Freiburg.

same room holding the collection of war injuries of 1870, there is a large exhibit of chests of tuberculous soldiers, freed from overlying soft parts, with the anterior half cut away, and with the roentgenogram, taken a few hours before death, hanging over the specimen, uniting clinical experience with pathologic detail. Surely here is method, backed by a wealth of scientific knowledge. But it is doubtful whether the spirit of curiosity behind it exceeded that of the ill-equipped ancients, whose slow but effective search for anatomic accuracy was long past its crude beginnings even in that far remote time when Abner was returned to Hebron, and Joab took him aside to speak with him quietly and smote him in the fifth intercostal space.

"FITNESS" IN DISEASE

The Census Bureau's summary of the annual report on mortality statistics reveals that 1,142,558 deaths occurred in 1920 within the death registration area of the continental United States, or among 82 per cent of its population. For the entire group of states it may therefore be estimated that 1,400,000 persons die each year. Not all of these are aged, discussions of vitality therefore stress the great importance of saving some of the lives lost. It has been alleged that disease involves a preventability of 42 per cent. The conservation programs which are so earnestly urged with the prevention of untimely death often take into account the fact that national efficiency is necessarily coincident with national "vitality." Many lives may be prolonged through a period of economic uselessness.

The question under discussion is one that frequently concerns the physician. He is often called on to evaluate the physical fitness of a patient, it may become a necessity in order to assign the latter to some appropriate form of activity or to protect him from strains that would be detrimental to health. Finding the right job—the proper place in society—for a person under par is likely to become one of the numerous problems that measure a physician's service and worth in the family and in the community. It is obvious that if the strength or endurance of any worker consistently falls much below the standard for the task to which he has been assigned, the outcome will be unfortunate, on the other hand, as Lee¹ pointed out in a war-time message, if his strength is markedly greater than that of his task, he is not economically placed. Vocational fitness is always a desideratum.

What is obviously needed is a suitable measure of deteriorated functions. Objective proof is usually far better than the most judicious impressions of a physician or friend. Unusual interest attaches, therefore, to psychologic tests that were applied to a group of Joslin's

diabetic patients in Boston by Miles and Root² of the Nutrition Laboratory of the Carnegie Institution of Washington. The results showed objective justification for the complaints of loss of memory and of ability to concentrate attention mentioned frequently by persons suffering from diabetes. The old and well established mental associations, such as are involved in doing simple addition of numbers, seem little influenced. But new tasks which demand immediate retention and recall, with little reference to past experience, are the ones which suffer and at which the patient finds himself below his former ability. There appears to be no marked increase in the errors the diabetic makes in his work as compared with the normal person, but rather a loss of speed, a decrease in the span, or amount that can be grasped at one time. That the change is chiefly in the nature of a retardation of the neuromuscular processes is indicated by those tests which more especially involve the muscles. In these, Miles and Root have found that the eye requires more time to turn and to react, that the fingers cannot make as many taps in a given interval, and that the hand cannot so accurately pursue a moving object. To what extent this retardation may be due to discouragement or mental depression, on the one hand, or specifically to the diabetes, as such, on the other, it is impossible to state. Miles and Root add that there is clear evidence that, with treatment, most of the persons tested showed rapid improvement on the psychologic side. The conclusions of these investigators will awaken widespread interest. They say that while memory span and muscle movement speed are of fundamental importance for the activities of life, there is a rather wide margin, and undoubtedly many persons with diabetes will be able to do as much light physical or mental work as is actually done by many normal men and women. In other words, "while the diabetic is not at all fitted for racing in top notch competition, still he is fairly well off for living comfortably and usefully." It will be of great value to secure additional studies of "fitness" on patients with other diseases.

INTESTINAL ANTISEPSIS

There is a widespread belief that, through bacterial changes in foods present within the alimentary tract, substances can arise that possess a harmfulness or toxicity of varying intensity for the organism. Clinical observations and personal experience serve to fortify this prevalent view, even though they cannot be said to constitute valid scientific evidence. Excessive intestinal putrefaction or the retention of the intestinal contents is frequently responsible for upsets in health varying from slight malaise to profound disturbance of well-being. Wells³ has summarized the situation cogently

² Miles W. R. and Root H. F. Psychologic Tests Applied to Diabetic Patients. Arch. Int. Med. 30: 767 (Dec.) 1922.
³ Wells H. G. Chemical Pathology. Philadelphia: W. B. Saunders Company, 1920. p. 90.

¹ Lee F. S. The Human Machine. New York: Longmans, Green & Co. 1918.

by remarking that few of the known products of gastro-intestinal putrefaction are toxic to any considerable degree, and these are probably produced in too small quantities to cause any appreciable effect, especially in view of the detoxicating and eliminatory powers of the liver, kidney and other organs. Nevertheless, the names of the diseases that have been attributed to intestinal toxemia are legion.⁴ Auto-intoxication, whatever it may mean, still finds advocates of its etiologic importance in human disorders.

One consequence of this large and seemingly justified interest in the production of poisonous bacterial products in the bowel and their subsequent absorption leading to harm has been the effort to prevent their formation. This led long ago to a variety of efforts to administer so-called intestinal antiseptics. The problem was reviewed in *THE JOURNAL* several years ago by Harris,⁵ working under a grant made by the Therapeutic Research Committee of the Council on Pharmacy and Chemistry. As is pointed out in the *Pharmacology of Useful Drugs*,⁶ there can be no doubt that the nature and character of the infection, its location in the intestinal tract, and the condition of the intestinal mucous membrane and its secretions, as well as the food residues in the bowel, must all influence the results of any efforts at intestinal antiseptics. It is not certain that absolute asepsis of the intestine is desirable, though it is unquestionably desirable to restrain the growth of putrefactive and other pathologic organisms. Some of the reasons for the popular use of certain purges, notably calomel, are their alleged action as an intestinal antiseptic. Fantus⁷ reminds us that calomel is now generally admitted not to be an intestinal disinfectant, nor has its action as an intestinal antiseptic been definitely proved. Whatever benefit is derived from the use of the drug is doubtless due to the resultant purgation rather than to any direct effect on the growth of micro-organisms in the bowel.

Recently a group of Chicago investigators⁸ has put the possibility of securing intestinal antiseptics by the use of drugs to a severe test under conditions readily controlled and in which any effect would be readily manifest. The procedure was based on the fact that death from intestinal obstruction is due to a toxemia. It has been demonstrated⁹ that the toxic materials are produced in the intestinal tract by the action of the normal intestinal bacteria on the intestinal contents. The symptoms can be reproduced in dogs by the production of closed isolated segments of various parts of the small

intestine by surgical operations. When this is done, a toxemia similar to that in acute obstruction occurs, and the source of the toxemia is the closed segment, since if this is removed the symptoms disappear. The proteolytic group of intestinal bacteria are the principal agents in the manufacture of the poisons absorbed from such closed loops of intestine. If these are rendered sterile by prolonged drainage into the abdominal cavity, no toxemia can occur.

As the production of these closed segments of the intestine is a readily available method of inducing in the experimental animal a toxemia definitely due to the activity of the intestinal bacteria, Dragstedt and Nisbet⁸ have attempted to sterilize the intestinal mucosa by the direct application of chemical antiseptics to isolated loops or short segments of the intestine in animals. Despite the fact that this procedure offers a far more direct opportunity for germicidal effects to manifest themselves than the usual oral administration could possibly permit, sterilization was in no case secured. Many of the usual antiseptics of a strength thought to be sufficient to sterilize a surgeon's hands were used without regard for their possible toxicity, since they could be immediately removed. Furthermore, they were applied directly to the segment of intestine in their full strength undiluted or mixed with the gastric or intestinal content. In spite of these most favorable conditions, it was not possible to prevent the intestinal toxemia associated with stasis. At present therefore, no experimental justification can be cited for the clinical use of antiseptics intended to produce intestinal antiseptics by direct action on the micro-organisms that inhabit the gastro-enteric tract.

Current Comment

THE MAMMARY GLAND AS AN EXCRETORY ORGAN

Milk is so unique in its composition, and the specific character of its constituents is so largely independent of direct dietary influences that it is looked on for the most part as an unusual synthetic product. From this standpoint therefore, the mammary gland in which milk is elaborated has come to be regarded as pre-eminently a secretory structure characterized by its constructive or anabolic capacities. Nevertheless the constituents of milk are by no means entirely confined to the group of products manufactured *de novo* in the mammary gland. Milk contains various substances present as such in the blood and other body fluids. Among these are the so-called nonprotein nitrogenous extractives—amino-acids, urea, creatin, creatinin and uric acid. It has been shown by Denis Talbot and Minot, for example, that in man even the figure for the content of the nonprotein substances are virtually the same in the milk as in the blood. Taylor¹ and

4 Weintraud W. *Ergebn d allg Path u path Anat* 4 17 1897.
5 Harris N M. *Intestinal Antiseptics* J A M A 59 1344 (Oct 12) 1912.

6 Hatcher R A and Wilbert M I. *Pharmacology of Useful Drugs* Chicago American Medical Association 1915 p 153.

7 Fantus Bernard. *Useful Cathartics* Chicago American Medical Association p 97.

8 Dragstedt L R, Dragstedt C A and Nisbet O M. *Intestinal Antiseptics* Effect of Antiseptics on a Type of Experimental Intestinal Toxemia J Lab & Clin Med 8 190 (Dec) 1922.

9 Dragstedt L R, Moorhead J I and Burch F W. *J Exper Med* 25 421 (March) 1917. Dragstedt L R, Dragstedt C A, McClintock J T and Chase C S. *J Exper Med* 30 102 (Aug) 1919.

1 Taylor W. *Notes on the Non-Protein Nitrogen in Human Milk* J Biol Chem J 16 611 1906.

Aberdeen has now presented additional evidence that in a lactating animal there is a correlation between the daily output of nitrogen in the urine and the percentage of nonprotein nitrogen in the milk, both apparently being determined by the amount of protein in the food. The concentration of nonprotein nitrogenous catabolites in the blood seems to determine both the amount excreted in the urine and the percentage present in the milk. The mammary gland acts to some extent as an excretory organ, waste nonprotein nitrogenous substances filtering through from the blood to the milk. The percentage in which these are found in milk seems to be determined by the degree of concentration in the blood of the end-products of protein metabolism. When the function of the mammary gland is viewed from this standpoint as well as from an appreciation of its synthetic capacities, it is not difficult to understand why milk should occasionally become a vehicle of substances that are undesirable as a dietary ingredient.

MALARIA AND SUNLIGHT

Sporadic cases of malaria, as was observed long ago, occur in the spring long before the breeding season of the anopheles mosquito. After it became known that malaria parasites could pass the winter in the human blood stream, these cases were recognized as relapses from acute attacks of the previous summer. Why relapse appears with the advent of spring has not been determined. Ross believed that external heat encouraged the parasites to multiply, and that when about fifty per cubic millimeter accumulated in the blood the first definite symptoms of illness were noted. He¹ observed in 1898 that the parasites in birds diminished when they were taken to the cool climate of the Himalayas, and that they increased again when brought back to Calcutta. Lenz² and Schaedel,³ accepting the parthenogenic theory of reproduction of Schaudinn, believe that sunlight causes the relapse and that its increased intensity stimulates the gametocytes to start the asexual cycle. On a similar basis, Reinhard⁴ undertook to cure malaria by exposing patients to ultraviolet rays with the idea of causing the parasites to come out into the peripheral circulation where quinin could destroy them, in 63 per cent of thirty-eight cases so treated, asexual forms of the malaria parasites appeared in the blood, in one half of them within seven days. In his patients not exposed to the rays, spontaneous relapse took place in about three and a half weeks. There is therefore clinical evidence that relapse in malaria is associated with exposure to sunlight, and that ultraviolet rays are an effective agent in producing it. Whitmore has undertaken to study the action of light in malaria in birds. It is planned to determine the dose of unfiltered light, and what part of the spectrum will cause a relapse, then to work back the dosage—he is working

with a quartz mercury vapor lamp—to an equivalent dosage of sunlight. The results thus far indicate that two hours' exposure to the lamp at a distance of 24 inches with the meter reading at 75 and the birds' feathers intact will cause relapse. Relapse will occur in fifteen minutes when the unfiltered light is directed to an area from which the feathers have been removed. Certainly these experiments may lead to great improvement in the facility with which this disease may be diagnosed.

THE VELOCITY OF THE PULSE WAVE

The study of the dynamics of the circulation has been accelerated in recent years as the result of numerous innovations in technic and of a greater inherent interest in the subject following the development of the clinical measurement of blood pressure and the evolution of electrocardiography. The methods employed in the days of pioneers like Chauveau and Marey have given way in part to procedures of greater accuracy and delicacy. Consequently, some of the so-called constants of the circulatory system have been redetermined, and the characteristics of its performance formulated more precisely than ever before. This is true of the velocity of the pulse wave, for example. It has customarily been estimated to vary somewhere between 6 and 9 meters a second for adults, the length of the wave being taken as about 56 meters. Bazett and Dreyer¹ of the University of Pennsylvania have lately concluded that the velocity of transmission of the pulse wave is much slower in the large vessels than in the smaller and more peripheral vessels. While a velocity of the pulse wave of about 7 meters a second is confirmed from a comparison of carotid and radial pulse, such a velocity is merely an average between a velocity of about 4 meters a second in the brachial and 8.5 meters a second or more between the elbow and the wrist. The velocity of transmission in the carotid, aorta and possibly the femoral artery is of about the same rate as that found for the brachial. The rate of transmission is much more variable in the more peripheral parts of the arterial system, and is in all probability much more dependent on local conditions of vasoconstriction or dilatation. It may be worth while recalling, further, that, in the light of the known facts, long before the pulse wave has disappeared at the beginning of the aorta it has reached the most distant peripheral vessels.

1 Bazett H. C. and Dreyer N. B. Measurements of Pulse Wave Velocity. *Am. J. Physiol.* 63: 94 (Dec.) 1922.

Educational Standards for Physiotherapists—The proper training of the physiotherapists of the future will have to be some two or three years of college education as a minimum, including biology, anatomy (including histology), physiology, bacteriology, chemistry and physics, so that we may be sure that they have sufficient knowledge of bacteriology, physiology, anatomy and other fundamentals. To this should be added one or more years of practical work in the hospital clinic with good instructors. All the necessary training in the technical procedures should be under the guidance of the medical profession. It would be a sad thing to banish the physiotherapist from the great medical centers where his influence and assistance are most needed.—R. L. Wilbur, *California State J. M.* 21: 25 (Jan.) 1923.

1 Ross Ronald. *The Prevention of Malaria*. New York: E. P. Dutton & Co. 1910.

2 Lenz F. *Malariaresistenz und Sonnenlicht*. München med. Wchnschr. 67: 697 (June 11) 1920.

3 Schaedel A. *Biologische Betrachtungen zur Frage der Malariaresistenz und der Malariaverbreitung*. Biol. Centralbl. 38: 143 1918.

4 Reinhard P. *Ueber Provokation latenter Malaria durch Bestrahlung mit ultraviolettem Licht*. München med. Wchnschr. 64: 1193 1917.

5 Whitmore Eugene. *Action of Light in Relapse in Malaria*. *Am. J. Trop. Med.* September 1922.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES NEW HOSPITALS EDUCATION PUBLIC HEALTH ETC.)

ALABAMA

Personal—Dr Hugh C McRee, Decatur has been appointed physician of Morgan County to succeed Dr Burton F Austin who resigned—Dr John L Gallagher, Dora, has been appointed full-time health officer of Limestone County—Capt William M Caffee, Manila, P I, who has resigned his commission in the M C, U S Army, will open an office in Birmingham—Dr Burton F Austin, Decatur was presented with a handsome gold watch and chain by members of the Morgan County Medical Society, February 1, on his retirement as county health officer Dr Austin succeeds Dr Grote as health officer of Huntsville and of Madison County

COLORADO

Society News—At the annual meeting of the Denver Tuberculosis Association Dr George Walter Holden Denver was elected president, and Dr Margaret E V Fraser Denver secretary—At the annual meeting of the Northeast Colorado Medical Society, at Sterling in January Dr John W Kinzie, Haxtum, was elected president, and Dr Edward P Hummell, Sterling secretary-treasurer Dr John W Amesse, Denver, gave an address on "School Health Problems"—Dr Thomas A Davis, Portland and Dr Otis Orendorff Canon City, were elected president and secretary-treasurer respectively, of the Fremont County Medical Society at the annual meeting in Florence, January 22

Colorado State Board of Health—At the annual meeting of the state board of health in Denver February 9, the following officers were elected for the ensuing year: president Dr George K Olmsted, Denver, vice president, Dr C W Compton, Pueblo and secretary, Dr Tracy R Love Denver Dr Margaret Ethel V Fraser, Denver Dr Samuel R McKelvey, Denver, and A W Scott Fort Collins, have been appointed to fill vacancies on the state board of health—It is reported that the Rockefeller Foundation has offered to aid the Colorado State Board of Health in its activities planned for the coming year among which is the establishment of health units throughout the state, each to be provided with a full-time health officer

CONNECTICUT

Professor Lambert to South America—Dr Robert A Lambert assistant professor of pathology and bacteriology at Yale University Medical School New Haven since 1919 has resigned to accept the professorship in the department of pathology at the Faculdade de Medicina e Cirurgia de São Paulo, Brazil Dr Lambert recently made a survey of the medical schools of San Salvador Guatemala and Nicaragua to obtain accurate knowledge concerning the standards of medical education in Latin America

DISTRICT OF COLUMBIA

Personal—P A Surg Marion F Haralson of the U S Public Health Service has been relieved from duty at Hamburg Germany, and assigned to temporary duty at Havre France in place of Surg Grover A Kempf who has been directed to proceed to London England to make investigations of health organization and administration in conjunction with the health section of the League of Nations—Asst Surg Gen Arthur M Stimson Washington has been directed to proceed to London England for duty in the American consulate relative to the issuance of American bills of health and to make investigations of health organization and administration in conjunction with the health section of the League of Nations

GEORGIA

Dr Bassett Reappointed—Dr Victor H Bassett has been restored to the position of director of the hygienic laboratory of the board of sanitary commissioners Savannah and also acting health officer during the reorganization of the city health department

IDAHO

Personal—Dr T N Braxton Boise has been appointed county physician of Ada County, Dr Thomas E Mangum Nampa county physician of Canyon County and Dr Vonanda G Logan American Falls, county physician of Power County—At the annual meeting of the Pocatello Medical Society Drs Casper W Pond and William F Howard were elected president and secretary-treasurer, respectively

ILLINOIS

Society News—Dr W A Peck of the Tri State Medical Society has been advised that the medical department of the U S Army will be host at a luncheon at Washington D C to about 250 members of the Tri-State society, who will compose the "clinic train" party that will visit the larger Eastern cities this spring for the purpose of attending clinics A clinic will be given at the Walter Reed General Hospital for the party

Physicians Under Trial—Dr Henry Lee Green Quincy convicted Jan 21, 1922, on a charge of violating the Harrison Narcotic Law was fined \$1000 and costs, February 5 at Springfield by Judge FitzHenry, according to reports—It is reported that Dr Carl W Kimery Sullivan was sentenced to thirty days in jail by Judge Grider, February 1 when he pleaded guilty to violation of the Volstead Act—Dr Albert Willis Christopher was acquitted of the charge of causing the death of Miss Mary Shufflett of Leroy it is reported

Personal—Dr John I Grant, Freeport was recently elected president of the Grant County Medical Society—Col John L Fryer, in charge of the sanatorium at Battle Mountain S D has been appointed chief surgeon at the Danville National Soldiers' Home to succeed Major Edward N Schullinger—Dr Arthur H Curtis Chicago addressed the members of the Vermillion County Medical Society at Danville February 6—Dr Guy G Kilgour Malden has accepted the appointment of assistant superintendent of the State Hospital for the Insane at Anna—Dr Franklin A Turner has been appointed director of hygiene of the Rockford public schools to succeed Dr Dudley W Day who resigned recently—Dr Arthur H Gollmar Kankakee is the author of a play "The Mirror Behind the Bar" or "A Glandular Extract from the Common Law" which was produced before the Kankakee County Medical Society recently

Chicago

Antinarcotic Activities—The propaganda committee of the Chicago Medical Society to whom the matter of relieving drug addicts was referred has complied with the request of the national organization and compiled a speakers list Plans have also been formulated by which those persons addicted to drugs will be properly hospitalized and provided with medical attention These plans will be announced later

Personal—Dr T Melville Hardie is a member of the Chicago Curling Club which defeated the Royal Caledonian Curling Club of Scotland at the annual games held in Chicago February 16—A dinner was given in honor of Prof or Schick of Vienna Austria February 21 at the Hamilton Club Following the dinner Professor Schick gave an address before the Chicago Medical Society on the Prevention of Diphtheria

INDIANA

Beardsley Bill Defeated—The state senate February 8 failed to pass the Beardsley bill which would commit Indiana to cooperation with the federal government under the Sheppard Towner Maternity act

Tuberculosis Conference—The annual meeting of the Indiana Tuberculosis Association was held in Indianapolis February 13-14 under the presidency of Dr George T McCoy Columbus Dr Charles H Good president of the Indiana State Medical Association Dr J S Prickett Battle Creek Mich and Dr K H Hays Chicago gave addresses at the conference Dr F Hanelle St Louis, U S Public Health Service Washington D C delivered a closing session February 14 on "School Health Service in Relation to Tuberculosis"

IOWA

Iowa Admitted to Registration Area—The recent annual statistics announces that Iowa now complies with the standards set by the Bureau of the Census for registration of

and has been admitted to the registration area of the United States Iowa is not yet admitted to the registration area on births

Society News—The semiannual meeting of the Sioux Valley Medical Association was held at Sioux City, January 25-26, under the presidency of Dr Cheney C Gross, Yankton, S D The meeting was preceded by the tenth annual convention of the Sioux Valley Eye and Ear Academy (Iowa, Nebraska and South Dakota), January 24, held under the presidency of Dr James M Patton, Omaha Among the speakers at both meetings were Drs George F Suker, Harry L Pollock and Clifford G Grulee of Chicago, and Dr Martin H Fisher of the University of Cincinnati—The annual meeting of the Iowa Tuberculosis Association was held at Cedar Rapids, February 14-16, in conjunction with the Iowa Sanatorium Association, the U S Public Health Service, the state board of health, the state housing commission and the county medical societies of the fifth district A health pageant was given by the children of the city

KENTUCKY

Personal—Dr F A Jones, Paducah, was recently elected president of the McCracken County Medical Society—Dr Eugene C Roemele, Frankfort, has been reelected health officer of Franklin County for two years—Dr William H Coffman, Georgetown, was recently elected president of the Scott County Board of Health—Dr Frederick G Speidel, Louisville, has been appointed physician for the Portland district, to succeed Dr Louis W Eckels, Jr—Dr G W White, Henderson, recently fractured both his wrists in a fall in a gymnasium—Dr Joshua W Meshew, Barlow, is in the Riverside Hospital, Paducah, suffering from septicemia—Dr E M Ewers, formerly of Anchorage, now surgeon at the hospital at Muchan, China, is visiting in the United States

LOUISIANA

Radiologists Elect—The annual meeting of the Louisiana Radiological Society was held in New Orleans, January 13, under the presidency of Dr Sidney C Barrow, Shreveport The following officers were elected for the ensuing year president, Dr Lucien A Fortier, New Orleans, vice president, Dr Clifford P Rutledge, Shreveport, and secretary-treasurer, Dr Harold G F Edwards, Lafayette

Personal—Dr Laurence R DeBuys, professor of pediatrics, Tulane University of Louisiana, New Orleans, has been elected a member of the board of directors of the American Child Health Association—Dr James M Batchelor has been appointed chief surgeon and chairman of the medical advisory committee of the Presbyterian Hospital, New Orleans, of which Dr John C Barr was reelected president, and Dr A C Browne, secretary

MAINE

Physician Loses Malpractice Suit—In the suit of Harold Fletcher against Dr William C Peters, Bangor, to recover \$10,000 for alleged malpractice, it is reported that on January 24, the jury returned a verdict of \$1,500 in favor of the plaintiff

MARYLAND

Epidemic (Lethargic) Encephalitis Prevalent—According to the director of the bureau of communicable diseases, Dr John F Hogan, Baltimore City Health Department, Baltimore is passing through a period of epidemic (lethargic) encephalitis In studying the present outbreak, Dr Hogan is making personal visits to patients at the request of attending physicians Two physicians of the health department have been designated to investigate all cases that have been reported since January 1, in order to ascertain the actual number of patients suffering with the disease

Personal—Dr Julius Friedenwald, Baltimore was recently elected president of the Southern Gastro-Enterological Association, at the annual meeting in Chattanooga Tenn—Dr Charles M Byrnes, associate in clinical neurology at Johns Hopkins University, Baltimore has been elected president of the Philadelphia Neurological Society—Dr George Edmund de Schweinitz, Philadelphia, President of the American Medical Association spoke on Vascular Changes in the Eye and Their Relationship to Constitutional Diseases before 300 physicians and surgeons at the University of Maryland School of Medicine, February 15—Dr Howard Barker has been appointed medical officer in charge of U S Veterans Hospital No 55 Fort McHenry

Gift to the Johns Hopkins University—Announcement was made by Dr Frank J Goodnow, president of the Johns Hopkins University, at the Commemoration Day exercises, February 22, of a conditional gift of \$900,000, from an anonymous donor At the same time, a grant of \$2,000,000 to the university from the Carnegie Corporation was announced This gift, the first ever made by the Carnegie Corporation to this university is to be used in the construction and maintenance of an outpatient dispensary and diagnostic clinic The gift of \$900,000 is provisional on the raising of \$1,000,000 by April 1 The Phipps fund of \$60,000, formerly available each year for the maintenance of the psychiatric clinic, will cease on that date The anonymous gift is to be expended for the expansion as well as the endowment of the psychiatric clinic

MASSACHUSETTS

Personal—Dr George MacIver, first assistant director of the Massachusetts General Hospital, Boston, has been appointed secretary-treasurer of the New England Hospital Association to fill out the unexpired term of Dr Nathaniel W Faxon, who recently became superintendent of the University Hospital, Rochester, N Y—Dr Charles A McCarthy has been appointed city physician of Lawrence—Dr Channing Frothingham, Jr, Boston, has been appointed a trustee of the Boston Psychopathic Hospital—Dr Henry L Houghton, Boston, has been appointed a member of the state board of registration in medicine to succeed the late Dr Nathaniel Perkins—Dr William L Richardson, Boston, has been appointed a trustee of the Perkins Institution for the Blind, Boston

MICHIGAN

Health Board Wins Decision—A writ of mandamus compelling the Lansing Board of Education to enforce the order of the board of health requiring vaccination of students, teachers and janitors of the public schools or their expulsion from schools, was issued by Judge Leland Carr, February 7, it is reported The board of education plans to carry the controversy to the state supreme court

MINNESOTA

New Public Health Journal—The *Northwestern Health Journal*, an outgrowth of the *Minnesota Public Health Journal*, published its first issue, February 10 Associated with Dr Naboth O Pearce, the editor, are Dr Carl B Drake, St Paul, editor of *Minnesota Medicine*, Dr William A Jones, Minneapolis, and B G DeVries, DDS The new journal has received the endorsement of the state medical association and the state board of health

MISSOURI

Chiropractor Bills—Three chiropractor bills have been introduced into the legislature, demanding that chiropractors who have been practicing in the state for one year be licensed, but that, after the passage of the act, they shall be examined by a chiropractic board in anatomy, physiology, chemistry, symptomatology, hygiene, sanitation and the special methods of chiropractic They must have as a preliminary qualification a four years' high school course or its equivalent, the bills state, and they shall be entitled to all the rights and privileges of physicians and surgeons

New Health Association—A health organization to be known as the Health Conservation Association has been formed by the amalgamation of the Kansas City Tuberculosis Society and the committees for social hygiene mental hygiene, dental hygiene and cancer control, with offices at 408 East Eleventh Street, Kansas City The association is for the protection and improvement of city health It will conduct campaigns against tuberculosis, cancer, venereal disease and other preventable or curable maladies R E Parsons, president of the city tuberculosis society, was elected president, and Dr Scott P Child, treasurer

NEW JERSEY

Mosquito Extermination Association Meeting—At the tenth annual convention of the New Jersey Extermination Association, in Atlantic City Dr Thomas J Headlee entomologist of the New Jersey Agricultural Experiment Station stated that 140,000 acres of salt marsh land had been drained and 60 per cent of the mosquito-breeding places on the upland had been eliminated as the result of the efforts of the association

Personal—Dr Effie R. Graef, Somerville returned home on the White Star liner *Homeric* in January after four years of hospital relief work in Turkey, Armenia and Russia—Dr G Wickoff Cummins has been appointed city physician of Belvidere—Dr Edward Guion, Atlantic City, has been appointed head of the Atlantic County Insane Asylum—Dr Louis Shalet, West New York, formerly superintendent of the Montefiore Home County Sanatorium, Bedford Hills, N Y, has been appointed medical superintendent of the Workmen's Circle Sanatorium, Liberty, N Y—Dr Charles Schwinn Camden, has been appointed superintendent of the Sunny Rest Sanatorium, Ancora, to succeed the late Dr Joel W Fithian.

NEW YORK

Kings County Medical Society Opposed to Reregistration—Dr Charles E Scofield, president of the Medical Society, County of Kings, reports that the society has gone on record as being opposed to any reregistration measures

Appropriation for Site for Veterans' Hospital—Governor Smith, in signing a bill which appropriates \$500,000 for the purchase of lands at the Kings Park State Hospital, suggested that the Kings Park Hospital be enlarged so that all New York State veterans of the World War who are mentally afflicted can be cared for there

State May Purchase Social Hygiene Plant—John D Rockefeller, Jr, has asked \$175,000 for his social hygiene plant beside the State Reformatory for Women at Bedford The managers of the latter institution are negotiating for the purchase of the plant, which is assessed at \$250,000 Mr Rockefeller built the plant of the social hygiene bureau and laboratory to further the work at the Bedford Reformatory

Scarlet Fever on Long Island—Twelve cases of scarlet fever were recently reported in one class in the public school at Freeport, L I Several cases of the disease have also been reported from Babylon Dr Frank Overton state medical supervisor of Suffolk County, has advised that all athletic events be cancelled for the present and that children be kept away from motion picture shows

Public Safety Commissioner Seizes Coal—Dr Arthur J Leonard, public safety commissioner of Saratoga Springs, directed the city police and firemen to seize two carloads of anthracite coal in the Delaware and Hudson Railroad yard, February 19, to relieve the coal situation in the city, it is reported A notice served on Dr Leonard by the president of the Saratoga Coal Company ordering him to give up the coal, was ignored and the distribution of coal proceeded, volunteer workers, police and firemen delivering it throughout the city to meet emergency needs

Hospital News—A campaign to raise \$1000,000 for the erection of a new nurses' home and new laboratories for the graduate courses recently inaugurated at the Long Island College Hospital Brooklyn, will be launched, March 1 and will continue for fifteen days—Twenty-two violently insane patients and three attendants perished in a fire which destroyed part of the Manhattan State Hospital, Wards Island, February 18 Of the ninety inmates, sixty-eight were finally saved after resisting and laughing at their rescuers—The Brooklyn Hebrew Maternity Hospital will erect a new building on the site adjoining the present institution at a cost of \$200,000 Ground will be broken about April 1

Symposium on Medical Organization—At a stated meeting of the Medical Society of the County of New York January 22 the outstanding feature was a symposium on medical organization Dr George E de Schweinitz Philadelphia President of the American Medical Association spoke on "The National Society", Dr Wendell C Phillips New York trustee of the American Medical Association gave An Intimate Talk on the Activities of the American Medical Association (illustrated with lantern slides) Dr Arthur W Booth Elmira, president of the state medical society spoke on "The State Society" and Dr Arthur F Chase New York president of the county association delivered an address on "The County Society"

Governor Calls Medical Conference—Invitations have been sent out from the executive office at Albany asking college professors health board officers rural practitioners and prominent physicians to meet with the governor February 26 to discuss pressing health problems Among the problems scheduled for discussion are the narcotic drug evil medical education and medical research rural health problems the need of physicians in rural districts and the enforcement of the Medical Practice Act The Medical Week in comment on this step, says that the governor by a sweep of the

pen lifted medical problems out of politics and made them the affair of the whole people and for the first time the medical profession stands where it should not on the defensive but as a body of experts sitting at conference with the chief executive of the state.

New York City

Sex Education at School of Pedagogy—Dr Thomas W Galloway of the American Social Hygiene Association will give a course of lectures to teachers at the School of Pedagogy of New York University Following is a summary of the course as outlined in the university's catalogue under sex education

An introduction to the problems of sex education for the teacher The course will include an elementary review of the biologic physiologic psychological and social groundwork of the sex social impulses and their expression with an effort to deduce from this and from the various experiments that have been made a tentative grading placement and technique in relation to both the schools and the other community agencies close to the work of the teacher The course will comprise lectures assigned readings discussions and special reports

Personal—Dr Joseph J Cosgrove has been appointed medical superintendent of the U S Veterans Mountain Camp Tupper Lake—Dr E V Cowdry of the Rockefeller Institute for Medical Research will deliver the Harvey Society Lecture March 10—Dr John J Moorhead has been appointed head of the new medical board of Beekman Street Hospital—Dr William P St Lawrence has been elected chairman of the Association of Cardiac Clinics—Dr Philip F O'Hanlon police department surgeon has been retired at his own request following twenty seven years of service and will resume the practice of medicine—Dr John I McGrath has been appointed chairman of the board of trustees of Bellevue and allied hospitals to succeed Dr John W Brannan—Dr Melvin S Henderson of the Mayo Clinic read a paper entitled Loose Bodies in the Joints and Bursae Due to Synovial Osteochondromatosis before the orthopedic section of the New York Academy of Medicine February 16—Dr Gustav Scholer has been reappointed by Governor Smith as manager of the Manhattan State Hospital—William Bondy of New York has been reelected member of the state board of regents—Dr Alexander Lambert testified before the House Foreign Affairs Committee in the first of a series of hearings on the bill introduced by Representative Porter of Pennsylvania to suppress illicit international traffic in drugs

NORTH CAROLINA

Abolishes Prison for Insane—The senate passed the bill which would abolish the department for the criminal insane at the state prison and place the inmates in the state hospitals for the insane February 9 Transfer of control of the state sanatorium for the treatment of tuberculosis from the state board of health to a board of directors to be named by the governor was also approved by the senate the bill passing its third reading

OHIO

Graphic Health Service—The Ohio Public Health Association has announced the inauguration of a graphic health service A series of charts of standard size will be issued on the 1st and the 15th of each month covering the subject of public health as expressed through vital and morbidity statistics the state department of health voluntary organizations hospitals dispensaries and public health nursing A year's subscription for these charts is \$2 which covers only the actual cost of preparation and publication

Medical Practice Act Upheld—In an opinion handed down January 16 in the case of the state ex rel Lewis M Copeland (a chiropractor) against the state medical board in which Copeland sought to compel the board to issue him a license to practice for five years before the limited practitioner act became effective October 1915 The Supreme Court of Ohio in a unanimous opinion written by Chief Justice Marshall holds that the mere filing of an affidavit by an applicant for a certificate stating that he was entitled to it is not sufficient The board has a right the court holds to inquire into the alleged facts set forth in the affidavit which it did in Copeland's case and refused him a license The court denied his application for a writ of mandamus to compel the board to issue him a certificate

New Buildings Named After Former Teachers—Three former Columbus physicians are honored in three buildings at the Ohio State University College of Medicine Columbus The present university building is the only one of the kind in the state The new addition will be known as the Dr S. C. University Hospital in honor of Dr S.

many years professor of medicine and at one time dean of the faculty of the Starling Medical College, and of Dr Lyne Starling, founder of the Starling Medical College and cofounder of St Francis Hospital. The medical research building, located just west of the hospital, has been named Kinsman Hall in honor of Dr David Nathaniel Kinsman, who was professor of the practice of medicine in the old Ohio Medical University. The medical science building will be known as Hamilton Hall, in honor of Dr John Waterman Hamilton, who was a professor of surgery in Columbus Medical College and a cofounder of Mount Carmel Hospital. The secretary of the board of trustees announced that these buildings had been named in honor of the three colleges of medicine which merged with the state university, and of the men who were most prominent in their work.

Hospital News—The Grant Hospital, Columbus, has been conveyed by Dr J F Baldwin, former president of the Ohio State Medical Association, through a deed of trust to a self-perpetuating board of trustees. The nurses' home was included in the transfer, which was made December 24. The new psychopathic hospital, erected at a cost of \$800,000 in Cleveland, and considered the latest advance in construction for the care and treatment of the insane, was closed December 25, after being open two weeks, by order of the director of public welfare. It has been announced that the institution will probably be rebuilt to correct certain defects. Plans for the erection of a state hospital for feeble-minded at Grafton at a cost of \$5,000,000, on a 1,100 acre plot, have been announced by the superintendent of the state welfare department. Construction work on the twenty-eight new buildings will start this spring, and the entire plant will be completed within two years, it is expected. The new hospital of the National Home for Disabled Volunteer Soldiers, Dayton, was opened for public inspection, January 22. Tuberculous patients only will be admitted to this institution, which has a capacity of 250 beds.

PENNSYLVANIA

Personal—Dr William C White has resigned as medical director of the Tuberculosis League of Pittsburgh following sixteen years of service. Dr C Howard Marcy will succeed Dr White. Dr Clair S Bauman, Lock Haven, has accepted the post of company physician at Calcutta, India, with the Ludlow Manufacturing Company of Boston. He will sail in May. Dr William G Turnbull, medical director of the Cresson Sanatorium, has been appointed deputy state health commissioner by Dr Charles H Miner, state health commissioner. He will assume his duties, March 1, succeeding Col John D McLean, resigned.

SOUTH CAROLINA

Trustees for Medical School Elected—The general assembly, February 1, elected Drs Gottlob A Neuffer, Abbeville, Larkin H Jennings, Bishopville, E H Barnwell, Charleston, and D T Riley, Florence, as trustees of the board of the Medical College of the State of South Carolina, Charleston.

TENNESSEE

Governor Signs Chiropractors' Bill—Governor Peay signed the chiropractors' bill, February 2, it is reported. This is the culmination of a long fight by the chiropractors of Tennessee to win recognition. The new act provides for the establishment of a board of chiropractors, one member from each grand division of the state, which is empowered to conduct examinations and issue licenses. It also authorizes chiropractors to sign death certificates.

Physician Wins Verdict—A peremptory verdict in behalf of Dr Abraham L. Blecker, Memphis, was directed in circuit court February 1, by Judge Pittman in a case brought against the physician by the administrator of the estate of Mrs Anna Katz deceased, in a suit for \$25,000 damages which grew out of the death of Mrs Katz following a cesarean section in June, 1918. The plaintiff contended that Dr Blecker performed this operation without the consent of Mrs Katz's father or husband. Dr Blecker stated that he operated in a serious emergency caused by the development of eclampsia. Judge Pittman in directing the verdict held that Dr Blecker was entirely right in operating under the circumstances.

UTAH

Hospital News—A receiving building was recently opened at the Utah State Hospital, Provo. It was erected at a cost of \$250,000 and is called the George E. Hyde Memorial building.

VERMONT

Personal—Drs Winfield Scott Nay, Underhill, and A E Parlin, Island Pond, have been reappointed to the Vermont State Board of Medical Registration. Dr William G Ricker, St Johnsbury, has been appointed a member of the state board of health, and Dr William N Bryant, Ludlow, a member of the board of supervisors of the insane.

VIRGINIA

Personal—Dr Howard F Smith, surgeon, U S Public Health Service, for the last two years quarantine officer-in-charge at Hampton Roads, has been transferred to Manila, P I. Dr A M Byrd has resumed practice in Richlands following three and a half years of illness. Dr Richard Eanes, formerly of Moseley, and for the last three years stationed at Tientsin, China, has landed in San Francisco. He will report for duty at the Fitzsimons Hospital, Denver. Dr William P Gilmer, Clifton Forge, sailed for Korea in January, where he will work as a medical missionary under the auspices of the Southern Presbyterian Church.

WASHINGTON

Hospital Contract Awarded—Construction of the U S Veterans' Bureau hospital located between Camp Lewis and Fort Steilacoom has been started. The Harley-Mason Company of Tacoma was awarded the contract for \$1,397,000, with a provision calling for completion within a period of 260 days. The entire cost of the base hospital will be \$2,000,000, and will involve the erection and equipment of twenty-eight buildings.

WISCONSIN

Personal—Dr Chester L Carlisle, surgeon, U S Public Health Service, has been assigned medical officer in charge of the U S Veterans' Hospital No 37, Waukesha, vice Surg Lawrence Kolb, who has been detailed to the Hygienic Laboratory, Washington, D C. Dr Carlisle was formerly chief of the neuropsychiatric section of the U S Veterans' Bureau in the eighth district, which comprises Wisconsin, Michigan and Illinois, with headquarters in Chicago.

PHILIPPINE ISLANDS

Banquet for Dr Beck—A dinner was given in honor of Dr Joseph G Beck, associate professor of surgery, otology, rhinology and laryngology at the University of Illinois College of Medicine, Chicago, by alumni of the University of Illinois and members of the eye, ear nose and throat department of the University of the Philippines, at the Manila Hotel, when he was touring the Far East, recently.

Society News—At the annual meeting of the Philippine Islands Medical Association, held in Manila, December 20-22, under the presidency of Dr Henry H Steinmetz, Manila, the following officers were elected for the ensuing year: president, Dr Antonio G Sison, vice presidents, Drs I Oto Schobl and Leoncio Lopez-Rizal, and secretary-treasurer, Dr Isabelo Concepcion (reelected). The next annual meeting will be held in Manila, December, 1923. Dr Walfrido de Leon who was elected delegate to the annual session of the American Medical Association, has already left for San Francisco. Dr Leonard Wood, governor general of the islands, Dr Charles N Leach of the Rockefeller Foundation and Capt W D Fleming, U S Army Medical Department Research Board, were among the speakers. The annual meeting of the Manila Medical Society was held January 3, in the library of the Philippine General Hospital. Dr Herbert W Wade was elected president for 1923, Dr Daniel De la Paz vice president, and Dr Carmelo M Reyes, secretary-treasurer (reelected). The chairman announced that Dr Liborio Gomez has been elected editor-in-chief of the *Journal of the Philippine Islands Medical Association*, to succeed Dr Carmelo M Reyes.

CANADA

Public Health in Canada—Seven cases of epidemic (lethargic) encephalitis were reported from Vancouver in one day recently. It was stated that the majority of the cases were preceded by influenza. The epidemic of influenza in Toronto is abating, although the capacity of the city hospitals is still overtaxed. The peak was reached the week ending February 10 when eleven deaths were reported in one day.

Personal—Drs John Hunter, Caroline S Brown, James E Forfar and Edwin C Beer were recently elected members of the school board in Toronto. Dr Paul A T Sneath, Toronto, has been appointed a medical officer on the Gold

Coast, West Africa He will take a course of instruction in tropical medicine in London England before taking up his duties in Africa—Dr Roderick D Dewar Melbourne and Dr William H Woods, Mount Brydges were elected president and secretary-treasurer, respectively, of the Middlesex Medical Association, at the annual meeting—Dr Alexander F McKenzie and Dr F M Walker were elected president and secretary, respectively, of the Southern Branch of the Simcoe County Medical Society at the annual meeting at Alliston—Dr Thomas C Routley, secretary of the Ontario Medical Association, addressed the Niagara District Medical Society at Welland, January 4

Amendment to Medical Practice Act—Amendments to the Quebec Medical Act passed by the lower house were recently approved in the public bills committee of the legislative council after a number of the proposed changes had been killed As finally approved, the bill holds that any one who assumes the title of doctor without qualifications whether in newspaper advertising or by other means, is liable to fines ranging from \$50 to \$200 Improper advertising of this character will also carry a three months' prison sentence as well as a \$200 fine for any offense subsequent to the second The clause stating that "without previously obtaining authorization from the lieutenant governor-in-council it is forbidden to keep an institute, private hospital, home for convalescent or sick persons, maternity hospital or establishment where consultations and treatments are given was struck out, following representations by osteopaths of the province

GENERAL

Drs Elliot and Lovejoy Awarded Medals—The Greek government has conferred the war cross on Drs Mabel Elliot of Benton Harbor, Mich, and Esther Lovejoy of New York, for their services with the Near East Relief in Smyrna It is stated this is the first time this decoration has been awarded to women

Society News—The seventy-fifth annual meeting of the South Carolina Medical Association will be held at Charleston April 17-19, under the presidency of Dr Charles F William Columbia and in conjunction with the South Carolina Pediatric Association, the state nurses' association and the state public health association—The annual meeting of the Southern Public Health Laboratory Association will be held in Richmond, Va, March 23-24 This association is composed primarily of the laboratory directors of the southern states—The Women's Medical Society of New York will hold its annual meeting May 21, in New York, under the presidency of Dr Harriet M Doane

Appropriation for Lepers' Home—The appropriation of \$650,000 to provide additional facilities for the national home for lepers at Carville, La, is authorized in a bill that passed the House of Representatives The measure had previously been adopted by the Senate and now goes to the President for his signature The bill authorizes the enlargement of the leprosarium at Carville to accommodate 500 patients as compared with its present capacity of 200 A theater is to be erected The U S Public Health Service now controlling the National Lepers' Home at Carville has been compelled to reject many applications from state health authorities asking that they be allowed to turn over lepers to the national government

Surgeons Sail for South America—Members of the American College of Surgeons sailed from Hoboken N J, February 10 on the Lamport and Holt liner *Vandych* for a cruise to South America which will occupy about two months The purpose of the trip is the promotion of professional and social relations between the surgeons of Central and South America with surgeons of the United States which it is hoped, will lead to an exchange of professors and students between the colleges of surgery in the various countries Approximately 350 members of the college and their families will make the trip Scientific meetings and clinics will be held in the various cities, and the medical schools and hospitals visited The party will be entertained by the president of Cuba At Colon Panama they will assist in laying the cornerstone of the Gorgas Institute of Tropical Medicine

Scheme to Defraud Physicians—A swindler has visited York Pa, Braddock Pa, and Alliance Ohio He aims to call on the leading surgeons of a city and make arrangements for an operation for a growth on the inside of his right jaw, and a fistula When all arrangements for the following day are made he produces a bank book on a bank in another part of the country saying he will deposit money in a bank in the city where he happens to be so that funds

can be used as required during his stay in hospital He induces the surgeon to advance money on account of his supposed bank account and of course never turns up for the operation the next day The impostor uses the name of Frank S Miller He is 65 to 70 years old and 6 feet tall He is clean shaven appears nervous and deaf has thin gray hair a growth on the inside of the right jaw and laughs peculiarly Should this party come to your attention please notify the First National Bank, Braddock, Pa.

FOREIGN

London Free from Smallpox—The two remaining cases of smallpox in London were discharged from the Long Reach Isolation Hospital, Dartford January 19 and for the first time in months the metropolitan area is free of the disease

Body of Roentgen Cremated—The body of Prof William Konrad Roentgen, discoverer of the roentgen ray was cremated at the Ostfriedhof Cemetery Munich February 15 The immediate cause of his death was strangulated hernia

German Dermatology Congress—The annual meeting of the German Dermatologic Society is to be held at Munich May 20-23 The only topic selected for discussion is 'Eczema For further details apply to Professor Rudolph Maassstrasse 1 Breslau

Manchuria Medical College—The Manchuria Medical College (formerly the South Manchuria Medical School) at Mukden having been recently raised to the rank of a university celebrated the augmentation of its faculty recently Dr I Inaba, president of the college, delivered the opening address

German Scientists Desire to Exchange Publications—A committee has been formed in Germany to facilitate exchange of scientific periodicals It is requested that those who wish to exchange American publications for foreign may address Notgemeinschaft der deutschen Wissenschaft, Bibliotheks-ausschuss Berlin C2 Schloss Portal 3

The Italian Surgical and Internal Medicine Congresses—The thirtieth annual meeting of the Italian Surgical Society is to be held at Rome in October the same week as the annual meeting of the Italian internists There is to be a joint session of the two to discuss the surgical treatment of gall stones from the standpoint of chronic pancreatitis The only other subject selected for discussion at the surgical congress is "Transplants The officers of the society are Professors Alessandri president, Parlayecchio and Baldo vice presidents and Rossa Felice and Crescenzo secretary and treasurer respectively

Roentgenologist Honored—Dr Charles Vaillant of the Lariboisiere Hospital Paris, who has suffered the loss of both arm in roentgen ray experimentation was awarded the croix de la Legion of Honor the Carnegie hero medal and the gold medal of the city of Paris February 19 The ceremonies took place at the city hall The United States ambassador Myron T Herrick conferred the Carnegie medal after Gen A Y E Dubail grand chancellor of the Legion of Honor had awarded Dr Vaillant the croix de la Legion of Honor the municipal council of Paris presented the gold medal of the city of Paris a rarely conferred honor Dr Vaillant has worked almost without respite for twenty five years at Lariboisiere Hospital and was one of the first Frenchmen to apply himself exclusively to study of the roentgen ray

Medical Library for American Hospital in Japan—Dr R B Teusler director of St Luke's International Hospital Tokyo is asking for assistance in building up a medical library at the institution The hospital staff which includes twenty Japanese physicians is handicapped by lack of reference books and the medical profession in general has no access to anything in Tokyo except occasional textbooks and reference files of American and British medical magazines St Luke's the only American hospital in Japan is long enlarged to a 250-bed capacity for private and charity patients Having published books on medicine or nursing are requested to donate copies and physicians who are returning from practice are asked to remember St Luke's when disposing of their libraries The Church Periodical Club 2 West Forty-Seventh Street New York has charge of providing the library and will be glad to furnish further information

German Warning Against Malignant Ampules—The German physicians of Greater Berlin have recently published a warning against the use of malignant ampules not to dispense them without the warning was issued after subcutan

from a box labeled to contain atropin in ampules in 1 mg doses. The ampules dispensed had been prepared for veterinary purposes, and each ampule was supposed to contain 0.1 gm of atropin. The organized pharmacists, it is stated by the *Medizinische Klinik*, have frequently warned that all preparations supposed to contain 1 mg doses should be viewed with suspicion. Not only the labels on the packages may be incorrect, but the dose may not be accurate. This was evidenced by the three cases cited. If the whole alleged amount of 100 mg had been contained in the ampule, the injection would probably have been fatal.

International Conference on Spanish Theory of Tuberculosis—The *Semana Medica* and other journals give the details of the conference to be held at Madrid in the last two weeks of April, to discuss the various aspects of the theory in regard to the etiology and treatment of tuberculosis, which Dr. Jaime Ferran promulgated twenty-five years ago, and on which there is now considerable international literature. It was commented on in *THE JOURNAL*, June 10, 1922, p. 1833. The conference is open to all who have any communication to make bearing on Ferran's theory. A list of those already inscribed for the conference includes a number of tuberculosis specialists from Latin America, and Ascoli of Italy, Pribram of Vienna and Bruck of Budapest. Prophylaxis and treatment based on Ferran's views were applied in 1919 on a large scale at Alcira in Spain, as described in the *Madrid Letter* at the time, Oct. 4, 1919, p. 1074. The letter described also the scientific foundation for Ferran's antialpha vaccination against tuberculosis.

Personal—Dr. Brunner of Groningen, who was active in obtaining temporary homes for German children in Holland during the war, has received an honorary degree from the University of Greifswald.—Dr. F. von Soxhlet of Munich recently celebrated his seventy-fifth birthday.—Dr. L. Asher, professor of physiology at the University of Berne, has been elected honorary member of the Biologic Society of Buenos Aires.—Prof. M. Oppenheim of Vienna has been invited to address the annual meeting of the London Dermatologic Society on "Recent Progress in Dermatology".—Dr. Galvez of Malaga was recently presented with an address on vellum in tribute to his work among the wounded in the Morocco campaign.—Dr. Franz M. Groedel of the University of Frankfurt, Germany, was the guest of the Eastern Medical Society at the New York Academy of Medicine, recently. He gave a roentgen-ray demonstration of cardiac movements.—Dr. E. Phole, Frankfurt, conducted a ten-day clinic at St. Joseph's Hospital, Omaha, February 5-15.—Major W. D. H. Stevenson has been appointed officiating director of the Pasteur Institute of India, Kasauli.—Col. Charles Macwatt has been appointed director general of the Indian Medical Service, to succeed Major Gen. Sir William Edwards.

Deaths in Other Countries

Dr. A. P. Sherwood, at Eastbourne two days after his retirement from practice.—Capt. William A. Whitelegge, surgeon of the British Navy, aged 61.—Dr. Cornelius Biddle, December 16, aged 74.—Dr. Mary T. McGarvan, a medical missionary of the Christian Church for twenty years, at Damah, India, following an operation. Dr. McGarvan was formerly a resident of Lisbon.—Dr. Hunter F. Tod, well known surgeon for diseases of the throat, nose and ear. He died from malignant disease of the larynx, January 23 in his own ward in the London Hospital.—Dr. Jorge Martinez Santamaria of Bogota, aged 42. Nearly the entire issue of the *Repertorio de Medicina* of Bogota is devoted to the official tribute from the president of the republic, and the resolutions of condolence passed by the national parliament, by the public health and other departments and by the scientific societies of Colombia on the death of this physician, who was called the Colombian Pasteur. He founded the rational laboratory for production of antisera and vaccines, and published works on tropical diseases, one on leprosy winning an international prize.—Dr. Raffray, physician on Mauritius Island, east of Madagascar. Two of his works, on the nervous system and diet, were awarded prizes by the French Academie de medecine.—Dr. Samuel M. Salazar, professor of medical propedeutics at the Military Medical School of Mexico.

CORRECTION

Chicago Surgeons Not on Tour—Drs. A. J. Ochsner and Henry Schmitz request statement that their names were included in a list of surgeons making the South American trip *THE JOURNAL* January 20 through error. The announcement published was taken from the *Chicago Journal*.

Government Services

New Name Proposed for Postal Department

The U. S. Postoffice Department, of which Dr. Hubert Work, former president of the American Medical Association, is head, will be known as the Department of Communications under the proposed reorganization of the government departments.

Colonel Forbes Resigns from Veterans' Bureau

It is announced from Washington that Col. Charles R. Forbes has resigned as director of the U. S. Veterans' Bureau. Colonel Forbes is now on leave in Europe.

U. S. Public Health Service

Examinations of candidates for entrance into the regular corps of the U. S. Public Health Service will be held, March 12, 1923, at San Francisco, Washington, D. C., and Chicago. Requests for information or permission to take this examination should be addressed to the Surgeon-General, U. S. Public Health Service, Washington, D. C.

Medals Awarded

Distinguished service medals for conspicuous efficiency during the World War were awarded this week by Secretary of War Weeks to Col. Christopher C. Collins, Medical Corps, and Capt. Robert A. Dickson, Medical Administrative Corps.

Reorganization of Government Departments

The plan of President Harding for reorganization of the government departments has been transmitted to Congress by the joint congressional committee on the reorganization of the administrative branch of the government.

An outstanding feature of the committee's report is the proposed creation of a department of education and welfare. This department would include a number of bureaus having functions related to public health, veteran relief and women and children's service, which are now functioning in at least a half dozen different departments of the government. The proposed organization of the department of education and welfare follows:

(a) This is a new department to have four major subdivisions, each in charge of an assistant secretary as follows:

- Education
- Health
- Social Service
- Veteran Relief

(b) Existing bureaus and offices to be transferred to the Department of Education and Welfare are as follows:

- From the Department of the Interior:
 - Bureau of Education
 - Indian schools
 - Howard University
 - St. Elizabeth's Hospital
 - Freedmen's Hospital
 - Bureau of Pensions
- From the Department of Labor:
 - Women's Bureau (part)
 - Children's Bureau (part)
- From the Treasury Department:
 - Public Health Service
- From the War Department:
 - Soldiers' Home
- From the Department of Justice:
 - Office of the Superintendent of Prisons
- Independent establishments:
 - Smithsonian Institution
 - Federal Board for Vocational Education
 - National Home for Disabled Volunteer Soldiers
 - Columbia Institution for the Deaf
 - Veterans Bureau

No immediate action is expected on the report of the committee. Its recommendations have the sanction of the Cabinet but must await the action of the December session of Congress.

Senate Investigation of Veterans' Bureau

A resolution proposed by Senator Walsh of Massachusetts, providing for a thorough investigation of alleged waste, extravagance and mismanagement in the Veterans' Bureau, has been adopted. The resolution requires the Special Hospitalization Committee, appointed in June, 1921, to consider

the charges of mismanagement, waste of funds and extravagant purchase of supplies, to determine whether or not such charges should be investigated and to recommend to the Senate the manner and scope of the investigation. The recent resignations of Director Charles R. Forbes, General Counsel Charles F. Cramer, and Dr. T. Hugh Scott, formerly executive officer, are regarded as significant in connection with the proposed investigation.

Survey of Philippine Subdistrict of Veterans' Bureau

Dr. L. B. Rogers, assistant director, has arrived from the Philippine Islands and is at his post as chief medical adviser in charge of the medical division of the U. S. Veterans' Bureau, Washington, D. C. Before leaving the islands Dr. Rogers, accompanied by Major A. C. York, manager of the Philippine Islands subdistrict, made a survey of bureau activities in that section. More than \$500,000 in gold is being paid annually to disabled ex-service men of the islands in the form of compensation, hospitalization and vocational training. Dr. Rogers visited the hospitals where bureau beneficiaries are located and personally examined about 300 patients. The bureau, which has about sixty cases in the Santol Tuberculosis Colony, Sana Mesa, Los Baños, the only institution in the vicinity of Manila admitting tuberculous patients, has a contract with the Philippine Island Antituberculosis Society, which conducts the sanatorium for the care of these wards, 5 pesos per day for each patient being paid by the bureau. Dr. Rogers, after visiting many proposed hospital sites, selected a tract of land with modern buildings, accessible to Manila and in a high altitude, which can be converted into a tuberculosis hospital at thirty days' notice. Following a conference with General Read and Colonel Kennedy of the U. S. Army, it was arranged that general medical and surgical cases should be cared for in the Sternberg Hospital at Manila.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Feb. 1, 1923

Maudsley Hospital Opened

The Maudsley Hospital, which is the first institution in this country following the lines of the neurologic and psychiatric clinics of the continent of Europe and of America designed for the treatment and investigation of organic nervous diseases, neuroses and incipient psychoses, has been opened. It was founded by the London County Council on the initiative of the late Dr. Henry Maudsley, an eminent alienist and psychologist, who made a munificent gift for the purpose—\$150,000—during his lifetime and left \$50,000 in his will. The hospital represents the first provision made by a public body in England for the treatment of early and curable types of mental disorder entirely on a voluntary basis and apart from certified cases. The hospital is intended primarily for the early treatment of mental disease but it is also intended to afford opportunities for diagnosis of cases in which special facilities are necessary for observation of cases of unusual scientific interest and for the study of psychologic medicine especially by physicians who have qualified. There are 157 beds for inpatients as well as an outpatient department. A course of lectures for the diploma in psychologic medicine under the direction of Sir Frederick Mott has been arranged. Given willingness to undergo treatment, good prognosis is the main feature constituting suitability for admission of patients. In fact cases without such prognosis will be admitted only on account of difficulty of diagnosis or exceptional scientific interest. Suitable types for admission among neuroses are hysteria, neurasthenia, anxiety and obsessional states, and among psychoses mild

phases of the manic-depressive type and those associated with pregnancy and the puerperal period with postinfective states with syphilitic brain disease or the interstitial types with alcoholism and other drug habits with endocrine disturbances and generally cases exhibiting mental symptoms associated with all forms of definitely bodily disease. Cases of organic nervous disease of most kinds with mental symptoms will be considered as sufficiently interesting to justify admission regardless of prognosis. Unsuitable types (except for diagnosis, research or teaching) are cases of simple congenital defect, epileptic deterioration, general paralysis, advanced dementia praecox and usually delusional states of more than one year's standing.

An Institute of Animal Pathology at Cambridge

The council of the senate of the University of Cambridge has presented a report on the offer of the ministry of agriculture and fisheries to establish an institute of animal pathology. For a long time it has been the opinion in the departments of agriculture and medicine of the university that provision should be made for the teaching of animal pathology. This opinion is strongly supported by the Right Hon. Sir Clifford Allbutt, regius professor of physics and by the professor of agriculture. The ministry offers in the first instance to provide a capital sum of \$150,000 for investment by the university on certain conditions bearing on the founding of a chair of animal pathology but it is not in a position to recommend any assistance toward expenditure on the study of animal diseases at Cambridge from funds other than the Corn Production Acts fund and when this fund is exhausted their commitments will cease. But when in 1927 or thereabouts this fund is exhausted the government will be prepared to consider, with due regard to the position of national finances and of agriculture provision for carrying on the scheme. The council is of opinion that the university should be protected from financial risk by the addition of a proviso that it should be under no obligation to continue the institute after 1927 unless satisfactory provision for maintenance is forthcoming either from the government or from other sources. In the event of failure of financial support the university will be left with a fully endowed professorship of animal pathology, an extension of the school of agriculture, with sufficient endowment to pay its rates and arrange for more or less temporary buildings. The council recommends acceptance of the scheme subject to the conditions mentioned.

Plan for a World List of Scientific Periodicals

At a meeting of the Conjoint Board of Scientific Societies a definite constitution was given to a scheme to prepare and issue a list of all scientific periodicals containing the results of original research with an indication of the libraries in Great Britain where they may be consulted. There are many thousands of such periodicals written in many languages, printed in almost every civilized country and produced at different prices and intervals. No accurate list of them exists; no single library contains even a large proportion of them; there is much overlapping and many periodicals are not known to reach this country. An international committee representing different branches of science has been arranging for the preparation and publication of a complete list. The trustees of the British Museum recognize the importance of the work and have consented to allow the preparation of the list to be undertaken by the staff of the British Museum printed books. Material has been sent in by many scientific societies and libraries and it is hoped that the list will be printed before the end of the year. A preliminary circular between 300 and 400 copies has been subscribed for at \$10 each. The complete list will be published in 1924.

Trust has guaranteed the cost of publication up to \$5,000 on condition that libraries at a larger number of centers in Great Britain than was originally intended be included

The Investigation of Distemper

The *Field*, a journal devoted to country life, is inaugurating a fund for investigation of the cause of distemper in dogs. It appeals for support, either in the form of one donation before March 1 or an annual subscription for three years beginning on that date. After the three years the position will be reconsidered, and it will be decided whether any further subscription is necessary. The Medical Research Council has promised cooperation and the use of its farm laboratory, which is under the direction of a skilled veterinary pathologist. Promises of collaboration and assistance have also been received from France and the rest of Europe, and particularly from the United States and the various dominions of the British Empire. Individual research is by no means a novelty in the long history of distemper. But by the centralizing of effort over so large an area, by avoidance of overlapping and by cooperation of the medical and veterinary professions, it is hoped to make greater progress than has been achieved before. Any advance in our knowledge of distemper will probably involve a similar advance in the power of controlling similar diseases in man. It is estimated that the loss caused by the ravages of the disease in dogs amounts to several million pounds a year. A bulletin of the progress made will be issued regularly to subscribers and to the press.

The Position of Physicians Under the Dangerous Drugs Act

The Dangerous Drugs Act, which was passed in order to prevent the abuse of drugs by addicts, has been described in previous letters to THE JOURNAL. Obligations are imposed on physicians in regard to giving prescriptions and keeping records. The Home Secretary, whose department administers the act, has issued regulations as to inspection. At first a policeman, acting under authority, could demand to see a physician's drug books, but the Home Secretary has now decided that inspection can best be carried out by health officers. This new regulation is regarded by the profession as less irritating, though not without objection, for it has been pointed out that the health officer may possibly be a rival practitioner with a right to enter premises without warning, to whom the books and other circumstances of an opponent would be thus thrown open. All prescriptions containing a dangerous drug must be in writing, dated, signed with the name and address of the physician, and must state the name and address of the patient, and the total amount of the drug to be supplied on the prescription. Physicians who dispense medicine must keep registers both of purchases of drugs and of their supply to patients. A physician who infringes any of the regulations is liable to a fine of \$1,000 or to imprisonment for six months. Further, the Home Secretary has power after conviction to withdraw from a physician his authorization. The effect would be to deprive him of his right to be in possession of or to supply drugs.

A Well-Documented Methuselah

Under this title, Donald MacKie, deputy registrar-general, Bureau of Vital Statistics, Edmonton, Alta., records in the *Lancet* the death of William Kennedy of Holden, which has been registered in his department. His age is given as 125 years, the primary cause of death as "senility," and the contributory cause as "exhaustion." On investigating the dates, Mr. MacKie got the following information from the son of the deceased: "He was baptized, Sept. 25 1802, near Enniskillen, Ireland, by the Rev. John Richardson, vicar of the

parish, and is the son of Thomas and Margaret Kennedy of Glenvannon. I personally copied it from the original in 1898. He had seven brothers and four sisters, and one of the latter was alive two years ago, and was senior to the deceased. He shaved without glasses two weeks ago, and until lately could read without glasses. He recited long passages of scripture within four days of his death, and passed away almost imperceptibly."

A National System of Registration of Disease

At the Royal Statistical Society, Dr. R. Dudfield advocated the establishment of a national system for the registration of disease. He said that though much attention had been given to epidemic diseases, there was a mass of disablement treated in hospitals and other institutions, of which no study on a grand scale had been attempted. The research work which was going on was too piecemeal in character. Data need bringing together from all institutions, to be collated and analyzed by a central body of statisticians with medical experience.

PARIS

(From Our Regular Correspondent)

Jan. 26, 1923

The Centenary of the Death of Jenner

The Academy of Medicine commemorated with appropriate ceremonies the centenary of the death of Jenner. A commemorative exhibition of documents connected with Jenner and the earliest period of smallpox vaccination was held, on this occasion, at the headquarters of the academy.

Some Criticisms on Modern Medicine

As he was about to retire from active duty, Dr. X. Arnozan, professor of clinical medicine at the Faculté de médecine of Bordeaux, gave a farewell lecture, in which he compared modern medicine with that in vogue fifty years ago. While unsparing in his criticisms of the medicine of the past, Arnozan also condemned contemporaneous medicine. He reproached it for not taking any particular account of the natural course of diseases. The belief seems to be prevalent that a disease cannot be cured unless it is treated with a specific. Another criticism of contemporaneous medicine is its too great multiplicity or complexity, the overdoing of specialization and the undue number of physical examinations to which patients are consequently subjected. There are, in fact, too many specialists. Finally, and chiefly, Arnozan arraigns modern medicine for being overready to accept new remedies. As soon as a new remedy is put on the market, everybody hastens to prescribe it, without waiting for sure evidence that its use is really beneficial. Then, after a few years, a few months or merely a few weeks of popularity, the new remedy is discarded, leaving the memory of useless, and sometimes, unfortunately, of dangerous prescriptions. Arnozan regrets particularly that, in the application of new remedies we often lose sight of the fact that a given remedy, excellent though it may be to combat the manifestations of an infectious agent in one portion of the organism, may be absolutely incapable of influencing conditions in other portions.

Collection of Public Health Statistics in France

I mentioned in a previous letter the critical study of Dr. Raoul Pacaud on the public health statistics of France (*THE JOURNAL*, Dec. 30, 1922, p. 2244). The question has been taken up also by Drs. Louis Martin and E. Briau, and they rendered a report on the subject to the ninth Congress of Hygiene, recently held at Paris. This congress, considering the fact that hygienists need to have access to public health statistics which are easily utilisable and always up to date, passed a resolution demanding that (1) death certificates

shall be obligatory and shall be executed by physicians (as far as possible, by the attending physicians) on an official blank giving a list of questions drawn up by the Conseil supérieur d'hygiène, (2) these official blanks, when filled out, shall be delivered at the *mairie* (mayoralty house), whence they shall be promptly sent to the departmental medical inspector of public health, who will each day classify the statistical information contained therein, (3) a condensed report of the statistics of each month shall be sent by the departmental medical inspector to the minister of public health whose duty it shall be to see that the statistical tables are kept up to date and that the departmental reports are communicated to the *Journal officiel*, and (4) an earnest appeal should be made to practitioners, through the intermediation of their associations and "syndicates," in order that, guarantees being furnished that privileged communications shall not be violated, they may give wholeheartedly and without mental reservations their complete and hearty cooperation toward securing reliable death certificates

Antivenereal Instruction

Dr Julien, an army physician, recently presented to the ninth Congress of Hygiene a communication on antivenereal instruction as given in educational institutions for young men. In 1921, Julien instituted in the boys' college of his city a series of lectures on public health, which he closed with a talk on "The Sexual Life and Its Dangers," to which only seniors who were candidates for the bachelor's degree were admitted. None of the boys' parents raised any objections, while most of them expressed their appreciation of his endeavors. In 1922, parents requested that he should give again the talk he had given the previous year for the older boys. These results seemed to the congress sufficiently encouraging to prefer a request to the minister of public instruction to establish as a regular routine in secondary schools, and in the beginning classes of higher institutions, sex education and antivenereal instruction, to be given by a competent physician and reserved for pupils above 16 years of age.

Taxes Imposed on Sanatoriums

The tax administration has of late made the claim that physicians who are directors of sanatoriums are required to pay the 8 per cent tax on industrial and commercial profits, instead of the 6 per cent tax that is levied on the profits of the so called liberal professions. An alienist who directs personally a sanatorium was addressed thus: "You are conducting a *pension* since you are hospitalizing a certain class of patients in a special establishment, where they may enjoy calm, rest and fresh air, while, at the same time, they receive the care appropriate to their condition. You furnish them also board and lodging, heat light and domestic service. Would you deny that these are acts identically the same as those performed by persons pursuing a purely commercial profession? It would seem that you should be taxed as one deriving commercial profits." The council of prefecture (a tribunal in each department of France which assists the prefect in his administration) of the department of the Seine with which the physician who had been thus taxed filed a complaint, decided the question quite differently. It rejected the claim of the fisc and brought out the fact that the profession of medicine consists essentially in caring for a certain category of patients. The acts in question constitute the exercise of the purely liberal profession of a medical alienist in treating his patients. Again providing patients with board and lodging heat light and domestic service appears to be a necessary consequence and only accessory or supplemental to the regular applied treatment and therefore cannot and does not change the character of the profession exercised.

The council of prefecture decided that the physician had been wrongfully subjected to the tax on commercial profits.

In an additional instance, M Grinda, member of the chamber of deputies, presented to the minister of finance the question. If two doctors of medicine have formed a partnership to practice their profession in common and in pursuit of this purpose, have contributed to a common fund to develop the possibilities of a sanatorium (founded, originally by one of the partners, before a partnership was entered into) which they manage themselves and in which they give their personal attention to the patients who entrust themselves to them are they subject to the tax on industrial and commercial profits, even though they employ a domestic and attending personnel, and are aided in the exercise of their professions by a physician who receives a fixed salary and in addition, certain supplementary fees, varying in amount? The minister of finance replied:

Physicians who are directors of a sanatorium and give personal attention to patients who are under treatment must if the principal purpose of their enterprise lies in the practice of their art be regarded as devoting themselves solely to the practice of medicine and therefore subject as regards their total profits from their profession to the tax on profits from noncommercial professions even though they employ a domestic and an attending personnel attached to the establishment and though they make use accessorially of the services of a salaried physician. On the other hand if their profits are derived chiefly from the furnishing of board and lodging to the boarders in the sanatorium of which they are directors or from the work of a confrere to whom is entrusted the largest part of the care required by the patient the operations in which they are engaged take on the character of a commercial enterprise and the profits they derive therefrom must be subjected in their totality to the tax on industrial and commercial profit.

Hospital Ships in Time of Peace and in Time of War

Dr Chastaing surgeon general of the navy, holds (*Archives de médecine et de pharmacie navales*) that a hospital ship should be above all a hospital. It should offer the same resources and give the same care and attention to patients that a hospital on land affords. To accomplish this, the first essential is to have wards in which the beds are conveniently arranged, preferably in a single row. Superimposed beds (double deckers) should be abolished. Separate isolation wards should be provided for patients with contagious diseases, tuberculosis and dysentery and for psychiatric and for hopeless cases. Almost all the wards should have an adjoining room in which patients may be examined and treated without being exposed to the gaze of the other inmates of the ward. A special room for the use of the nurses should also be provided. There should be two operating rooms a room for sterilization a roentgenographic room a pharmacy with an analytic laboratory a morgue with a port hole for burial at sea and storerooms for hospital material and patients effects.

A separate mess should be provided for ambulant patients. After meals have been served the mess halls may be used as rest or lounging rooms. On the bridges open spaces or passages rooted in with glass may be utilized as a promenade for convalescents or as places where patients may be given an airing or exposed to the sun.

Adjoining the several wards there should be ample facilities for shower baths. A delousing room a sulphuration room and steam dryers for clothing, should be provided. Cold storage rooms are indispensable for the preservation of meats and fresh food stuffs. It is not out of place to have a morgue with a refrigerating chamber for the preservation of cadavers such as were talked about fifteen years ago on board the American hospital ship *Pelut*.

The medical personnel of a hospital ship should be sufficiently large and so habituated to live at sea as to be in a position to face any situation that may arise at any time. As regards the number of nurses necessary from 8 to 10 per cent of the bed capacity of the hospital constitutes an average estimate.

In time of war, hospital ships may not be used for any purpose other than as hospitals. The chief surgeon should be on board the highest representative of authority, charged with the execution of orders that he receives directly from higher authorities, and not dependent on the captain. On board mixed transports, the medical director should be the supreme authority in the hospital section.

BELGIUM

(From Our Regular Correspondent)

Jan 20, 1923

Dyspnea and Pneumothorax

At a recent meeting of the Academy of Medicine, Dautrebande and Spehl presented an important study on the causes of dyspnea and of death in open pneumothorax. They conclude that surgical pneumothorax induces dyspnea owing to anoxemia, and that this condition, characterized mainly by a superficial and rapid respiration that soon becomes dangerous, can be combated by the administration of oxygen.

Spermatic or Seminal Cysts

Before the Belgian Urologic Society, Dr Cantinaux presented recently the results of his researches on the origin of bilateral spermatic cysts, and discussed their relationship with syphilis.

Drainage in Empyema

Speaking before the Belgian Surgical Society, Willems stated that he had tried several times reversible drainage, but that he had obtained only mediocre results, for generalized purulent pleurisies, at least, he regards it as insufficient. In the case of patients confined to the bed, he performs a posterior thoracotomy (Walther method) in the costovertebral groove at the level of the tenth or eleventh intercostal space. In the less grave cases, when the patient can sit up early, Berard's technic is advantageous. Lateral thoracotomy at the anterior axillary line, resection of the seventh rib with insertion, the patient sitting upright, of a drain at the lowest point. The main point in order to prevent the formation of pleural fistulas is to use short drains that do not penetrate the pleura but are just long enough to keep the wound in the thorax open.

Poisonous Mushrooms

Before the Societe royale des sciences medicales et naturelles of Brussels, M Dekeyser presented a proposal concerning the control and supervision of the sale of mushrooms. After some discussion, the following resolution was unanimously adopted:

The Societe royale des sciences medicales et naturelles of Brussels in view of the dangers that the public incurs owing to the absence of control of the sale of mushrooms has passed a resolution favoring a strict supervision of this traffic. It has decided to send the text of this resolution to the provincial and communal authorities, the Conseil superieur d'hygiene and also to the public press.

Thymectomy

Before the Societe medico-chirurgicale of Brabant, Dr Marique presented the case histories of fifteen children on whom he has operated for hypertrophy of the thymus. He performed an extracapsular thymectomy according to the technic of Veau and Olivier. The operation is exceedingly simple. The skin incision is as for a low tracheotomy, slightly inclined downward. Keeping precisely on the middle line the operator, pushing the sternothyroid muscle aside reaches the thymic capsule which, when opened allows the two lobes of the thymus to be easily enucleated. Marique stated that the feeling of suffocation which constitutes the main indication for the operation is immediately relieved, and that the other symptoms likewise disappear very soon.

The patients operated on, when seen at irregular intervals, presented no anomalies of weight or height, which is not

surprising, since thymectomy is never total. By reason of the simplicity of the operation, it may be regarded as a competitor of radiotherapy, and it has the advantage that it can be performed in remote places or in urgent cases.

Domiciliary Treatment in Mental Cases

Dr Boulenger presented to the Societe de medecine mentale a communication that is of interest to psychiatrists and legislators alike, for, since the passage of the revised act of June 14, 1920, domiciliary sequestration has passed beyond the stage of mere care taking, but has not as yet developed to the point that it constitutes a consistent means of treatment in mental cases over which judicial authority exercises supervision and control. Sequestered mental patients should not be dependent solely on the devotion of relatives or on the constantly varying prejudiced opinions that they may entertain with respect to those mentally defective. These patients usually receive good physical treatment, but they lack the psychiatric treatment needed. It is now proposed that domiciliary sequestration shall be organized on a scientific and medical basis. This will require the creation of a special medical service and a special nursing personnel in each province or judicial district, the medical service to consist of one or more psychiatrists, aided by visiting nurses who have received special instruction, whose duty it shall be to advise, aid and supervise the mentally defective who are sequestered, and to counsel with the family that has assumed their care, in regard to their treatment. This seems to be the only way to render the act of 1920 effective.

The Proper Time for Osteosynthesis

M Lambotte, the first proponent of osteosynthesis, discussed recently before the Societe belge d'orthopedie the results of his experience with regard to the choice of the proper time for such intervention in fractures. Lambotte holds fast to his principle of not operating on diaphysal fractures under one to two weeks after the traumatism. He has observed that fractures operated on immediately show unmistakable evidence of retarded consolidation. He attributes this to the fact that the periosteum, during the first few days following the breaking of the bone, has not as yet regained its embryonal character. Immediate intervention is indicated only in case the bone fragments protrude through the skin, in grave arterial lesions, or in impingement of nerves. Epiphysal fractures, especially in children, are not subject to this rule and may be operated on at once, the same is true of fractures of the short bones.

BERLIN

(From Our Regular Correspondent)

Jan 27, 1923

The Struggle Between the Health Insurance Societies and the Physicians

Many of the health insurance societies, owing to the bad economic conditions obtaining generally, are in financial straits. In compliance with governmental decrees, they have been compelled to increase the sick benefits, likewise their disbursements for medical treatment and medicines have been augmented, but after the recent avalanche of high prices, the reaction to which, in the form of higher wages, came but slowly, the capitation fees paid by the members of the health societies were not raised for some time, and the supplementary charges are in many instances, several months in arrears. Owing to the heavier drains on their treasuries, together with diminished receipts the financial condition of many health insurance societies has become so desperate that they have been compelled to petition loans from the central government, the governments of the federal states or the municipalities. The directors of the *Hauptkrankenkassenver-*

band (federation of public health societies, which includes district, industrial and provincial public health societies) immediately took advantage of these admittedly deplorable conditions to launch an attack against the principle of free choice of physician, which, for several decades, has been a bone of contention between them and the opposing organization of physicians, namely, the Leipziger Verband (the Leipzig league). As the most essential means of accomplishing their purpose, they demand the abolition of Section 182 of the federal act governing the administration of social insurance. This section provides that members of the health insurance societies, if they become ill, must be given not only sick benefits but also free medical treatment, free medicines and, in short, everything needed for their recovery. The directors of the federations of health insurance societies now demand that, in view of their depleted finances, as the main cause for which condition they allege the free choice of physician, free medical treatment, etc., be abolished, and that members who are taken ill shall receive solely a definite sum per day as a sick benefit. It is evident that the main purpose of social health insurance would be thwarted by any such modification of the law, for, especially at the present time, when workmen and employees, owing to the prevailing economic distress, often have not sufficient means at their disposal to buy the necessities of life, the sick members of the societies would frequently be tempted to divert to other purposes the sick benefits they received, instead of providing for themselves the needed medicines and medical treatment. Many of them would resort to quacks instead of consulting reputable physicians, which would invalidate one of the main purposes of health insurance. That the income of physicians would be thereby much impaired goes without saying, and, since, at present, a large part of their practice is derived from the health insurance societies, the physicians are quite justified, for material reasons, in their opposition to the proposal of the directors of the health insurance societies. Another matter that has a wide bearing on the situation is the fact that, just recently, the limit of income under which all persons are obliged to take out health insurance, that is, become a member of one of the health insurance societies, has been raised to 2,400,000 marks. It is fortunate that our leading statesmen are fully alive to the true situation of affairs, and it is pleasing to record that, a few days ago, the conferring committee of the reichstag rejected the demand of the directors of the health insurance societies for the abolishment of Section 182.

Personal

Professor Heubner, the senior German pediatrician, who for many years was head professor of pediatrics on the University of Berlin Medical Faculty and who, since his retirement, has been living in a suburb of Dresden celebrated, January 21, in the full vigor of health his eightieth birthday.

The Heubner Prize, which was created in honor of Heubner's seventieth birthday and which is awarded, every three years, for the best work done in the field of pediatrics, has just been bestowed on Dr Degkwitz, assistant physician in the Munich University Children's Clinic, for his application of an antimeasles serum. Degkwitz himself discussed the nature of his serum and the results he has secured with it in the *Deutsche medizinische Wochenschrift* (48:26 [Jan 5] 1922). His results have since been confirmed by all German children's clinics.

Dr Franziska Tiburtius, a woman physician of Berlin celebrated, January 24, her eightieth birthday. She became at first a governess and teacher, and took up medicine later in life. As Germany at that time, offered no opportunities to women desirous of studying medicine she entered the

University of Zürich, where she studied from 1871 to 1875. After taking her degree in Zürich she served for a time in the Women's Hospital in Dresden, under Professor Leopold and then, in 1877 settled in Berlin. When later, through her work, she became known to a large circle of women she founded, together with another woman physician, Emilie Lehman, who has since died, a polyclinic, and afterward a hospital for women. This highly esteemed physician who was the first champion of woman physicians in Germany received on her eightieth birthday a hearty ovation at the hands of the woman physicians of the city.

Creation of a Government Institute for Medical Research

The Emperor William Academy for medicosocial education, which was formerly the Emperor William Academy for the advancement of military medicine is to be transformed into a government institute for medical research. This large institute, which was completed just a few years before the war is to turn over its excellent laboratories and its library which is probably the largest medical library in Germany to the service of scientific medical investigation. Further details will be given when the plans for the transformation have been fully matured.

Increase of Alcoholism and Drunkenness

Prof. E. Meyer, director of the Königsberg Psychiatric University Clinic states with regret, in the *Deutsche medizinische Wochenschrift* January 5 that alcoholism and its sequels which during the war, for evident reasons, showed a decrease, have again begun, during the last few years to rear their head. In his own clinic the percentage of patients admitted for chronic alcoholism showed a marked increase during the fiscal year 1921-1922 (after the percentage for the year 1918-1919 had trebled). Of 795 men 100 or 12.58 per cent and of 503 women 11, or 2.18 per cent were admitted for alcoholism. Furthermore in the case of thirty-three men and two women, the tendency to drink to excess constituted an essential factor in the causation of their mental derangement. Professor Meyer advocated that Germany should adopt regulations similar to those in force in the United States. It is true that in the United States our culture does not play as distinctive a role as it does in Germany and the financial difficulties that stand in the way are harder for us to overcome. In spite of that fact what needs to be done should be done. For example the production of beverages with high alcohol content such as brandy, liqueurs, strong wines and strong beers should be prohibited and the sale of alcoholic beverages in general should be strictly regulated.

VIENNA

(From Our Regular Correspondent)

Jan 6 1923

Infant Mortality in Rural Districts

The Austrian Eugenic Society (Oesterreichische Gesellschaft für Bevölkerungs-Politik) gets reports from all parts of the country from competent observers with a view of controlling the development of the birth rate and public health. Two medical men, Dr. Varcubler and Dr. Gerhardsinger have studied for the society the conditions prevailing among the agricultural population of Upper Austria and the Tyrol two typically conservative and old-fashioned provinces 90 per cent of the population being peasants. Their report is a shock to all persons accustomed to the conditions of poverty in towns and cities. Infant mortality and general morbidity is in our minds inseparably connected with poverty and want. And it is a revelation to city dwellers to learn that among peasants who for many years have enjoyed excellent incomes and have enjoyed tremendous profits

even know from hearsay the lack of nourishing food, infant mortality exceeds by far the highest statistics for Vienna, with its hundreds of thousands of underfed children.

In the capital, 99 per cent of all children born in 1920 died within their first year of life. In upper Austria, the figure was 211 per cent, in Pyrot, 27 per cent, while in Styria and Carinthia, also rural provinces, the rate was 20 and 173 per cent, respectively. In the richest rural district of Austria, where a population of 767,000 exists, the average was 276 per cent, while in some villages 40 and 50 per cent of all children died before the age of 12 months. In one hamlet (667 population), of seventy-six new-born babies, only one was alive after a year. In another district of the same province, a purely industrial one, where in 1913 there was an infant mortality of 176 per cent, it rose, in 1917, to 216 per cent, but it stands now at 191 per cent. What is the reason of the remarkable difference between the two populations? Hereditary influences can be ruled out, as only one child is born dead for each thirty-nine born alive, although syphilis among infants is now more frequent, owing to the effects of the war. The only real cause is the manner of rearing children. The main reason for the excessive death rate among young infants is artificial feeding. Among our peasants, it is practiced from the first day of life. An inquiry among the midwives of these districts showed that barely 70 per cent of these infants are ever given the breast. This is not due to inability of the peasant women to nurse their infants or to any defect on the child's part, but to the absence of knowledge of the importance of breast feeding, and to old customs. Farinaceous food and cabbage and oatmeal are included in the daily fare of the new-born, and bottle feeding is practiced to excess, without the slightest attention to sterilization of the bottle or the contents or the quantity, or periods of rest. There is no trace of efficient nursing, no knowledge of the most primitive hygienic principles.

Tuberculous persons, who are very numerous among the rural population in spite of all the hygienic possibilities of fresh air and good food, are allowed to mix freely and play with even the youngest children. Naturally, whole families are thus extinguished, once an infection is started. Alcohol, in the shape of cider, is not withheld even from infants, and superstition is paramount even among the midwives, in an amazing degree. The reporters point out that the rural districts are suffering from an alarming want of primitive knowledge, owing to the old-fashioned methods of government and absence of schools, while the ceaseless efforts of physicians in the towns have influenced nearly all mothers to give their babies the breast. Perhaps the lack of other food and of milk is also a factor. The rich peasant mother shrinks from her maternal duty because of laziness and of bad examples. Here is a most fruitful field for the intervention of the board of health, and in this country, where religion plays such an important part among the peasant population, influence will have to be brought to bear on the Roman Catholic church to induce its priests to act as apostles of modern hygiene in these rural provinces. Otherwise, race suicide is an absolutely sure consequence.

Marriages

EDWARD MITCHELL HANRAHAN, JR. to Miss Evelyn Barton Randall, both of Baltimore, February 3.

LEO W. ZIMMERMAN Timblin, Pa., to Miss Katherine Zapp of Louisville, Ky., January 31.

CORTLAND MIEPS to Miss Anne Esther Hughes, both of Los Angeles, January 26.

Deaths

John R. Hoffman, Wilmette, Ill., Northwestern University Medical School, 1891, member of the American Academy of Ophthalmology and Oto-Laryngology and vice president of the Chicago Ophthalmological Society, secretary and professor of ophthalmology at the Chicago Eye, Ear, Nose and Throat College, for twenty-five years superintendent of the Chicago Eye, Ear, Nose and Throat Hospital, aged 57, died, February 19, of thrombosis.

Clement Belton Lowe, Vineland, N. J., Jefferson Medical College of Philadelphia, 1887, also a pharmacist, emeritus professor of materia medica at the Philadelphia College of Pharmacy, at one time president of the Pennsylvania Pharmaceutical Association and vice president of the American Pharmaceutical Association, editor of *Plants of the Philippines* and other botanical works, aged 76, died, February 6.

William Augustus Hardaway, St. Louis, St. Louis College of Physicians and Surgeons, 1870, Missouri Medical College, 1873, formerly professor of diseases of the skin at Washington University Medical School, St. Louis, at one time president of the American Dermatological Association, author of "Essentials of Vaccination" and "A Manual of Skin Diseases", aged 73, died, February 3.

Mary Thomas Miller, Philadelphia, Woman's Medical College of Pennsylvania, Philadelphia, 1899, member of the Obstetrical Society of Philadelphia and the Philadelphia Pediatric Society, on the staff of the West Philadelphia Homeopathic Hospital, where she died, February 8, from pneumonia, aged 53.

Clarence M. Slack, St. Petersburg, Fla., Jefferson Medical College of Philadelphia, 1865, member of the Florida Medical Association, veteran of the Civil and Spanish-American wars, formerly superintendent of the Florida Baptist Children's Home, Arcadia, aged 81, died, January 28, from senility.

David C. Peyton, Jeffersonville, Ind., University of Louisville Medical Department, Louisville, Ky., 1886, member of the Medical Society of Virginia, veteran of the Spanish-American and World wars, superintendent of the Indiana Reformatory, aged 62, died, February 6, from pneumonia.

Rufus Joshua Cassel, Mount Vernon, Wash., University of Minnesota Medical School, Minneapolis, 1901, member of the Washington State Medical Association, served in the M. C. U. S. Army, during the World War, with the rank of captain, aged 48, died, January 30, from heart disease.

Richard J. Hill, Minneapolis, Jefferson Medical College of Philadelphia, 1875, member and at one time president of the Minnesota State Medical Association and the Hennepin County Medical Society, formerly on the staff of St. Mary's and Asbury hospitals, aged 69, died, February 2.

John Miles Martin, Grove City, Pa., Bellevue Hospital Medical College, New York, 1874, member of the Medical Society of the State of Pennsylvania, served five terms as state legislator, veteran of the Spanish-American War, aged 74, died, February 5, following a long illness.

Joseph Coles Brick, Philadelphia, Jefferson Medical College of Philadelphia, 1894, member of the American Proctologic Society, associate professor of proctology at his alma mater, on the staff of the Jefferson Hospital, aged 61, died, February 4, from carcinoma.

James William Hinckley, Boston, Tufts College Medical School, Boston, 1898, formerly instructor of gynecology at his alma mater, member of the Boston Society of Medical Sciences, on the staff of St. Elizabeth's Hospital, aged 65, died suddenly, February 7.

William Napier Keefer, Toronto, Ont., Canada, McGill University Faculty of Medicine, Montreal, Que., 1869, I. R. C. S. Edinburgh, and L. S. A., London, 1869, served in the British army during the Afghan War, in India and Egypt, aged 78, died, January 27.

Isaac Arthur Harris, Weaverville, N. C. (licensed, North Carolina, 1885), member of the Medical Society of the State of North Carolina, Confederate veteran, president of the Farmers' and Traders Bank, aged 84, died, December 29, from cerebral hemorrhage.

Israel Lurier, New York, Medical School of Harvard University, Boston, 1914, served in the M. C. U. S. Army, dur-

ing the World War, with the British and the American armies, on the staff of the Bellevue Hospital, where he died February 5, aged 34

Edward S King, Bluff City, Tenn, Hospital College of Medicine, Medical Department Central University of Kentucky, Louisville, 1890, member of the Tennessee State Medical Association, aged 57, died, December 10, from cerebral hemorrhage

Victor Oscar Saphro * Los Angeles, University of Colorado School of Medicine, Denver, 1910 lieutenant, U S Naval Reserve Force, aged 37, died, February 3, at the Fitzsimons General Hospital, Denver, from bronchopneumonia

Albert Butler Stone * Lamar, Mo, Northwestern Medical College, St Joseph, 1890, president of the Barton County Medical Society, also a druggist, aged 73, died, February 3, at Pittsburg, Kan, from carcinoma of the prostate

Richard Gay De Puy, Jamestown, N D, University of Michigan Homeopathic Medical School, Ann Arbor, 1881, member of the North Dakota State Medical Association, aged 67, died, February 4, from influenza

Joseph Adkemar Jeannotte * Leadville Colo, Laval University Faculty of Medicine, Quebec Que, Canada, 1875, mayor of Leadville, on the staff of St Vincent's Hospital, aged 68, died, January 31, from pneumonia

George Bethune Best, Englewood, N J New York Homeopathic Medical College and Flower Hospital, New York 1887, member, and at one time president of the state board of health, aged 63, died, January 26

William H Crow, Pavo Ga Atlanta Medical College, Atlanta 1895, member of the Medical Association of Georgia aged 52 died, February 4 at Sylvester, from injuries sustained in an automobile accident

Isabella Hursen * Chicago, Chicago Physio Medical College 1902, formerly adjunct professor of medicine at her alma mater, aged 55, died February 11 from heart disease following an attack of influenza

John H Rice, Quincy Ill, Eclectic Medical Institute Cincinnati, 1878, Rush Medical College, Chicago, 1898, member of the Illinois State Medical Society, aged 66, died, January 31 following a long illness

William A Ross, Forkshoals, S C, Southern Medical College Atlanta, Ga, 1892, member of the South Carolina Medical Association, aged 56, died at Greenville, January 30 from heart disease

William F Hoey, Frederica, Del Hahnemann Medical College and Hospital of Chicago 1889, aged 61, died, January 24, at the Homeopathic Hospital, Wilmington from epidemic (lethargic) encephalitis

Nelson H McNew, Carlisle Ky (licensed Kentucky 1893) former county judge, for twelve years editor of the *Carlisle Democrat*, aged 86, died, December 13 from cerebral hemorrhage

James Claude Wilhoit, Manhattan Kan University of Louisville Medical Department, Louisville Ky 1907, member of the Kansas Medical Society, died, February 17, from pneumonia

John W Kidd, Burnsville W Va, College of Physicians and Surgeons, Baltimore 1884, formerly member of the state legislature, aged 66, died, February 2, from cerebral hemorrhage

Robert Orrin Burke, Lansing, Mich, Chicago College of Medicine and Surgery Chicago 1915 member of the state board of health, aged 37 died December 16 from pneumonia

Milton Emerson Lake * Erie Kan, Medical College of Indiana, Indianapolis, 1885, also a druggist aged 33, died February 7, from acute dilatation of the heart and pneumonia

William S Martin, Tuscola Ill, Bellevue Hospital Medical College, New York 1877 member of the Illinois State Medical Society, aged 85 died, February 5 from senility

Damel B Warren, Wellston, Ohio, Medical College of Ohio, Cincinnati, 1878 member of the Ohio State Medical Association, aged 69 died, February 1 from pneumonia

James Philip Roy, Richmond Va, University of Virginia Department of Medicine Charlottesville 1884 member of the Medical Society of Virginia, aged 61, died January 25

Marvin Le Roy Smoot * Fayetteville N C, University College of Medicine Richmond Va, 1903, aged 46 died February 6, following a long illness

William D Vanderpool, Montesano Wash, Missouri Medical College St Louis, 1882, also a pharmacist, aged 70 died, December 31 from carcinoma of the stomach

James Nelson Ayers, Cresset, Mich, University of Michigan Homeopathic Medical School Ann Arbor 1889 aged 65 died recently, from carcinoma of the stomach

Henry B Wiggs, Russellville Ark Memphis Hospital Medical College Memphis Tenn 1896 also a druggist, aged 49, died January 29 at Colorado Springs Colo

Joseph Robert Lee Hardesty, Washington D C Jefferson Medical College of Philadelphia 1896 Confederate veteran, aged 87 died, February 3 from senility

Reuben C Fisher, Belton Texas Louisville Medical College Louisville Ky 1893 aged 52, was found dead in his office January 30 from heart disease

Edward S Crump, Detroit, Detroit College of Medicine and Surgery 1917 aged 33, died February 2 at the Harper Hospital, from epidemic (lethargic) encephalitis

Phillip A Conner, Whittion Ark (licensed, Arkansas 1907), aged 43 died January 30, from a bullet wound in the brain presumably self-inflicted

Sidney Thompson * Humboldt Tenn Vanderbilt University Medical Department Nashville, 1882 aged 61, died January 29 from heart disease

L C Downtain, Eastland Texas, College of Physicians and Surgeons Keokuk Iowa, 1881, aged 63 died February 8 from cerebral hemorrhage

Hitzel C Le Blond, McCurdyville W Va, Medical Department of Western Reserve University Cleveland, 1881 aged 65 died, January 29

Victor Veranus Thompson, Waldoboro Me Medical School of Harvard University Boston 1911, aged 50, died suddenly January 26 of heart disease

George Clinton Evans, Tulsa Okla (licensed years of practice) aged 43 died at the Oklahoma Hospital, December 13 from senility

Francis Ignatius Drobinski * Brooklyn, Long Island College Hospital Brooklyn 1906, aged 41, died February 9 from angina pectoris

Walter A Lamont, Denver Medical Department University of Tennessee Nashville 1883 aged 75 died January 27 at Canon City Colo

Henry H Moorehouse, Toronto Ont Canada Victoria University Medical Department 1871, aged 76 died December 23 at Oakville

Howard Luther Diehl, Gettysburg Pa Hahnemann Medical College of Philadelphia, 1876 aged 64, died February 2, from pneumonia

Charles C Eldred * Joliet Ill, Jefferson Medical College of Philadelphia 1875, aged 73, died February 4, following a long illness

Jesse Marvin Williams, Los Angeles Wisconsin College of Physicians and Surgeons, Milwaukee 1903 aged 46, died February 4

James Wayne Martin, Winona, Okla Barnes Medical College St Louis, 1899, aged 48 was shot and killed by bandit December 1

Walter Leon Culbertson * Philadelphia Maryland Medical College Baltimore, 1911 aged 40, died February 3 from pneumonia

Harriett Judd Sartain, Philadelphia Eclectic Medical Institute Cincinnati, 1854 aged 93 died February 8 from senility

John R Harwell, Nashville Tenn University of Nashville Medical Department 1864 aged 86 died February 7 from senility

John Hardin Stewart, Sr, Exeter Ill Rush Medical College Chicago, 1870, died February 2 from cerebral hemorrhage

David Hume Rice * Colorado Springs Colo Mt St Medical College St Louis 1885 aged 67 died January 2

A S Byrne Neilis, Dayton Ohio Chicago Homeopathic Medical College Chicago 1882 aged 62 died January 25

Noah P Busbird, Round Bottom Ohio (licensed 1918) aged 78 died January 17 from chronic nephritis

J W Powell, Evansville Ind Louisville Medical College Louisville Ky, 1881 aged 77 died February 1

Elijah J Tucker, Oroville Calif American Medical College St Louis 1882 aged 72 died Jan

MEDICAL, CHIRURGICAL, AND ANATOMICAL CASES AND OBSERVATIONS
By Laurence Heister M.D. Senior Professor of Physic and Surgery
in the University of Helmstadt first Physician and Aubic Counsellor
to his serene Highness the Duke of Brunswick. Member of the Imperial
Academy of Sciences and Fellow of the Royal Societies of London
and Berlin With Copper Plates illustrating the Descriptions in the
respective Cases Translated from the German Original By George
Wirgman London Printed by J. Reeves For C. Hitch etc. MDCCLV

It is a large quarto of more than 700 pages. The preface is by Dr Shaw, and the introduction by Daniel Cox, who declares his ignorance of German. It is worth noting that Lord Lister owned a copy of this translation (No 1285 in Catalogue 733 [1913] of Henry Sotheran & Co, London), and may have read the passage in question.

Dr Rudolf does not attempt to give any information whatever in regard to the German original, which is, of course, necessarily earlier than the English translation. Its title-page reads:

D LAURENTIUS HEISTERS MEDICINISCHE CHIRURGISCHE UND ANATOMISCHE WAHRNEHMUNGEN NEBST KUPFERN UND GEDOPPELTEN REGISTERN Mit Königl. Pohnisch und Churfürstl. Sachsischem allergnäd. Privilegie Rostock verlegt Johann Christian Koppe 1753 Quarto with Heister's portrait engraved by A. Beck.

A second volume appeared in 1770, four years after Heister's death.

In the original the appendicitis observation is numbered 111 instead of CX. Dr Erich Ebstein of Leipzig has recently given a photographic facsimile of the page (194) in question so that it is now readily accessible to all. It appears in *Virchows Archiv für pathologische Anatomie* 226 98, 1919. Ebstein thanks me there in a note because it was I who first called his attention to the passage in Heister and he then (1914) wrote to me asking for the precise reference. The number of the *Canadian Medical Association Journal* containing Dr Rudolf's article was handed to me in the office of the editor, my friend Dr William W. Francis, in May, 1913. Within a few days I secured a fine copy of the original edition of Heister's book, and later obtained the English translation also. The original was lent to Dr Howard A. Kelly in 1914. Both original and translation were presented to the "Bibliotheca Osleriana" in 1921, and thus will go to the medical faculty of McGill University.

I should perhaps mention that the New York Academy of Medicine owns an elaborate and valuable manuscript bibliography of appendicitis by the late George M. Edebohls. In this some one has added in pencil a reference to Heister, 1755, p. 136, Case 110.

LEONARD L. MACKALL, Savannah, Ga.

ORGANIZATION OF WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

To the Editor—Since the last session of the American Medical Association, when the organization of a Woman's Auxiliary of the American Medical Association was authorized, it has been gratifying to note the progress made. Several states have been organized and are on a working basis. Many others are in the process of organization having given favorable opinions, so that by the time of the San Francisco session, it is hoped there will be a large number of states organized, with delegates and representatives in attendance.

The Woman's Auxiliary of the American Medical Association is no longer a dream but a realized entity and it is felt that if all the states knew that the others were endorsing and furthering the movement some prejudices could be removed on the ground that it is an experiment, for such is far from the case.

This means is taken to give any state desirous of organization an opportunity to get any information that may be needed, should any have been overlooked, in order that there may be time to organize and have representatives at the session of the American Medical Association in San Francisco, for it is an assured fact that a large proportion of the states will be represented.

Should any desire information the corresponding secretary, Mrs. H. L. D. Kirkham, 3711 Mount Vernon St., St. Louis, Mo.,

Texas, will be very glad to furnish the information needed and be of any assistance possible in organization.

MRS. H. L. D. KIRKHAM, Houston, Texas
Corresponding Secretary, Woman's
Auxiliary to the American
Medical Association

THE PREVENTION OF CONCEPTION

To the Editor—The Chicago Gynecological Society is desirous of giving proper publicity to its present stand on the subject of the regulation of conception. The following paragraphs are therefore submitted for publication.

In accordance with a resolution passed by the Chicago Gynecological Society, the undersigned committee sent to all of the members of the society a questionnaire dealing with various phases of the general subject of regulation of conception. The replies were analyzed and submitted to the society at its regular business meeting of January 10 and the society unanimously approved of the following conclusions:

1. It is against public policy that information as to contraceptives should be given to the general public.

2. Information as to the prevention of conception should be given wherever indicated to wives and husbands by physicians either privately or in existing clinics and dispensaries.

3. Special clinics for the dissemination of this information are neither necessary nor desirable nor should nursing organizations be utilized to give out such instructions.

4. Risk to the mother based on ill health whether due directly to existing disease or to the drain of too frequent childbirth under unfavorable home conditions is the essential indication for instruction in prevention of conception.

5. All mechanical devices used by the wife as well as strong chemical douches, are discountenanced.

RUDOLPH W. HOLMES, M.D.,
JOSEPH L. BAER, M.D.
N. SPROAT HEAVY, M.D.

Chicago

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

DANGERS OF WORK WITH ROENTGEN RAY

To the Editor—Some time ago a news item stated that a building in Paris had refused to lease rooms for roentgen rays, alleging danger to other tenants. 1. What practical dangers which might warrant such action and what principles might enable the superintendent of a hospital office building similarly placed to know what measures are necessary for safety of persons constantly placed in contiguous rooms? 2. What physical ill effects might be expected to result from such protection? Please omit name and address.

C. E. RAY

ANSWER—1. There are no conclusive results on this particular question but there are instances of persons working in rooms which permit certain conclusions to be drawn from facts regarding the alleged danger. The danger points to avoid the walls of the room, the danger to persons working in rooms, the danger of the room in which the rays are virtually nil. A practical measure is to place the roentgen-ray tubes in a large manufacturing plant during the process of manufacture. The persons work in rooms where the roentgen-ray tubes which are in the process of rarefaction for several years, and

mately) some of the newer deep therapy tubes have been in action for long periods of time, running as high as 295,000 volts, while many others are operated at around 200,000 volts. On careful inquiry it appears that in no instance has an untoward action been found on any of the numerous workers who constantly are occupied in the immediate vicinity of these roentgen-ray tubes. Blood tests have been repeatedly made on these employees in order to detect any untoward action of the rays. In order to insure a proper peace of mind in any one concerned, as those in neighboring rooms, it is regarded as advisable to provide some protection against the supposed deleterious action of roentgen rays. For this reason some roentgenologists place a lining of sheet lead (from $\frac{1}{32}$ to $\frac{1}{16}$ inch) on the walls of the rooms in which the roentgen ray is used. This sheeting is often carried from the floor up to about 8 feet, although to be entirely consistent it should cover all the walls, ceiling as well as the floor, thus making a six sided lead lining. (Such a lead lining should always be covered with pantasote or similar material, it ought not to be left bare, to avoid lead poisoning of the technicians and assistants.) This, of course, is in addition to the usual standard lead-glass bowl around the roentgen-ray tube, lead protection screen or lead lined booth for the operator, which are an actual necessity in all instances. Some go to ridiculous extremes in providing unnecessarily thick lead linings which are costly, many others use no such lead lining at all. Obviously, the roentgen-ray operator is the one who requires most protection from untoward actions of the roentgen-ray, mainly because he is continually engaged in the work and is in close proximity to the tube. It is well known that in applying the very penetrating roentgen ray such as is now coming into extended use in the treatment of deep-seated malignancies, the unprotected roentgen-ray tube will result in a considerable quantity of the rays reaching into the neighboring rooms. However it would be the grossest negligence were one to use such a roentgen-ray tube without protection, such as a standard lead-glass bowl, metal parts supporting it, proper filters of copper, and the like, all of which serve to reduce the amount of roentgen ray which reaches places other than the area being treated. In the case of a so-called "deep roentgen-ray treatment" using 200,000 or more volts, using the accepted formula as to filter target-skin distance, milliamperage, etc., the amount of roentgen ray which escapes would be too small to be dangerous. The amount of ray which passes through 1 mm of copper, plus 1 mm of aluminum, through the small diaphragm opening which entirely confines the direct roentgen rays within the body of the patient, and the attenuation of the roentgen-ray strength, which decreases rapidly with the added distance traveled, is very small. The amount of roentgen ray which reaches a person in a neighboring room or in the room above or below, from 15 to 20 or more feet away, separated by the modern concrete and steel construction of floors, ceilings and walls would be so small that it would not be sufficient to cause tissue or blood changes even if continued over considerable periods of time.

2 The physical changes to persons acted on by the roentgen ray such as is suggested by the question, if it really did occur would probably be the same as changes occurring in unprotected roentgen-ray workers, namely, a leukopenia. Skin changes under the conditions mentioned in the inquiry are unheard of.

TREATMENT OF ICHTHYOSIS

To the Editor—Please describe the most satisfactory treatment for congenital ichthyosis (a mild case) G T Wyco W Va

ANSWER—There is no satisfactory treatment for ichthyosis. It is a congenital defect in the skin which cannot be corrected. In addition to the excessive horn formation, there is in ichthyosis a deficiency of sweat and sebaceous secretion so that the skin is abnormally dry. The most that can be done for the cases is to supply this deficiency of fat in the skin by the local application of fat in some form. This can be done by theunction of any sort of a bland ointment. Petrolatum or cold cream is perhaps as good as any. Occasionally on localized areas where the horn is thick it can be softened and diminished by the addition of salicylic acid—from 10 to 60 grains to the ounce of ointment. Bathing also softens the horn and warm baths prolonged to ten or fifteen minutes are useful. But they should be followed by theunction of a bland fat immediately afterward, or they increase the dryness of the skin.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA	Juneau	March 6	Sec	Dr Harry C De Vighne	Juneau
IDAHO	Boise	April 4	Dir	Mr Harry L Fisher	Boise
IOWA	Des Moines	March 8 10	Sec,	Dr Rodney P Fagen	State House Des Moines
MAINE	Portland	March 13 14	Act Sec,	Dr Adam P Leighton	192 State St, Portland
MONTANA	Helena	April 3	Sec.	Dr S A Cooney	Power Bldg, Helena
NEW HAMPSHIRE	Concord	March 9 10	Sec,	Dr Charles Duncan	Concord

Arkansas November Examination

Dr J W Walker, secretary, Arkansas State Board of Medical Examiners, reports the written examination held at Little Rock, Nov 14-15 1922. The examination covered 12 subjects and included 120 questions. An average of 75 per cent was required to pass. Seven candidates were examined, all of whom passed. Eighteen candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad	Per Cent.
College of Physicians and Surgeons Little Rock	(1910)	79	5
Tulane University	(1922)	92	1
Harvard University	(1922)	87	9
Memphis Hospital Medical College	(1911) 77	5	79
Vanderbilt University	(1888)	79	1

College	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
Atlanta Medical College	(1915)	Georgia	
Southern Medical College	(1891)	Georgia	
Northwestern University	(1902) Oklahoma	(1922)	Mississippi
Indiana University	(1921)	Indiana	
University of Maryland	(1904) Dist	Colum	
Barnes Medical College	(1911)	Missouri	
Kansas City Medical College	(1896)	Oklahoma	
Memphis Hosp Med Coll	(1902) Tennessee	(1904)	Mississippi
Meharry Medical College	(1914) Texas	(1918)	Tennessee
University of Tennessee	(1895) Texas	(1921, 2)	Tennessee
University of Texas	(1920)	Texas	

Nebraska November Examination

Mr H H Antles, secretary, Nebraska State Department of Public Welfare reports the written examination held at Lincoln Nov 6-8, 1922. The examination covered 9 subjects and included 90 questions. An average of 70 per cent was required to pass. One candidate took the examination and passed. Thirteen candidates were licensed by reciprocity. Two candidates were licensed to practice as chiropractors. The following colleges were represented:

College	PASSED	Year Grad	Per Cent
College of Physicians and Surgeons Chicago	(1906)	84	6

College	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
Chicago College of Medicine and Surgery	(1909)	Illinois	
Loyola University	(1921)	Illinois	
Northwestern University	(1921) 2	Illinois	
Rush Medical College	(1921) Michigan	(1922)	Illinois
Keokuk Med Coll	Coll of Phys and Surg	(1908)	Kansas
College of Physicians and Surgeons Baltimore	(1915) W Virginia		
University of Maryland	(1919) W Virginia		
Ensworth Medical College	(1906)	Kansas	
Meharry Medical College	(1921)	Tennessee	

Florida October Examination

Dr W M Rowlett, secretary, Florida State Board of Medical Examiners reports the written examination held at Tallahassee Oct 10-11 1922. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Of the 41 candidates examined, 31 passed and 10 failed. The following colleges were represented:

College	PASSED	Year Grad	Per Cent.
University of Alabama	(1910)	77	6
Atlanta Medical College	(1914)	78	3
Emory University	(1915) 79 (1916) 79	2	84
(1922) 77 6 84 1 87 2			
University of Georgia	(1891) 77	3 (1911) 77	4
Chicago College of Medicine and Surgery	(1917)	80	3
Rush Medical College	(1889) 80 (1910) 90		84
College of Physicians and Surgeons Chicago	(1906)	94	9
Tulane University	(1919) 80	8 (1921)	81

Johns Hopkins University	(1917)	857	893
University of Maryland	(1917)	806	
Harvard University	(1915)	806	
University of Michigan Medical School	(1919)	885	
College of Phys and Surgs in the City of New York	(1896)	752	
Columbia University	(1904)	846	
University of Buffalo	(1921)	863	
Cleveland Medical College	(1895)	787	
Ohio State University College of Medicine	(1898)	841	
University of Oklahoma	(1916)	88	
University of Pennsylvania	(1922)	847	

FAILED

University of Alabama	(1910)	636	
Atlanta Coll of Physicians and Surgeons	(1907)	561	
Atlanta School of Medicine	(1911)	713	
University of Georgia	(1911)	706	
Rush Medical College	(1884)	729	
College of Physicians and Surgeons Baltimore	(1884)	688	
Kansas City Medical College	(1905)	727	
Chattanooga Medical College	(1903)	444	
University of St Thomas Philippine Islands	(1910)	656	

North Carolina December Meeting

Dr Kemp P B Bonner, secretary, North Carolina State Board of Medical Examiners, reports that eight candidates were licensed by reciprocity and one candidate was licensed by endorsement of credentials at the meeting held at Durham, Dec 12, 1922. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year	Reciprocity with
Atlanta Medical College		(1914)	S Carolina
Indiana University		(1919)	Indiana
Louisville and Hospital Medical College		(1908)	S Carolina
Medical College of Virginia	(1914)	(1917)	Virginia
Medico-Chirurgical College of Philadelphia		(1913)	Penna
Meharry Medical College		(1913)	Tennessee

College	ENDORSEMENT OF CREDENTIALS	Year	Endorsement with
University of Pennsylvania		(1916)	N B M Ex

Book Notices

THE KINGDOM OF EVILS Psychiatric Social Work Presented in One Hundred Case Histories Together with a Classification of Social Divisions of Evil. By E E Southard M.D. late Bullard Professor of Neuropathology Harvard Medical School and Mary C Jarrett Associate Director Smith College Training School for Social Work. With an Introduction by Richard C Cabot M.D. Professor of Social Ethics Harvard University and a Note upon Legal Entanglement as a Division of Evil by Roscoe Pound Dean of the Harvard Law School. Cloth Price \$5.50 Pp 707 New York The Macmillan Company 1922

This book which was almost ready for publication at the time of Dr Southard's death has been completed by his friends, it will stand as a lasting monument to his life and work. His collaborator, Miss Jarrett who was Chief of Social Service at the Boston Psychopathic Hospital, directed the social treatment which is here recorded. This is the first book to be devoted to psychiatric social work, and illustrates and analyzes, in a most graphic and illuminating way, the problems with which this young but vigorous field of therapeutic endeavor is confronted. The facts presented go far to prove that, of a verity, social work is fundamentally psychiatric. The conditions of human life require that the individual adjust himself to organized society to his associates and to himself. The major fields of social work are therefore declared to be public or governmental social or voluntary and individual or personal. Each requires special consideration from the social worker. The problems concerned are admirably illustrated by cases. The case histories which form the basis of the book selected from a rich and intensively studied material were not chosen to illustrate successes or failures in social treatment, but to bring out the types of evil with which society is confronted. In some cases one type of evil predominates in others there are various combinations and corresponding degrees of complexity. The major evils are five *morbi* or diseases and defects of body and mind, the need of which is cure, *errors* or educational deficiencies and misinformations whose requirement is that we teach *vicia* or vices and bad habits to remedy which we must train *litigia* or legal entanglements in and out of court to be met by the counsel and *penuria* or poverty and other forms of resourcelessness, which demand that we

provide. The discussion which follows is practical and brings out in bold relief the resourcefulness, versatility, keen insight and intensely human interests which characterized the genius of Dr Southard. The language is simple and in spite of the case history method which has been adopted there is not a dull chapter in the book. Appendices have been added which provide a model for careful social work, also a rather complete bibliography. The book can be recommended to physicians who are interested in the treatment of 'the man' as well as the disease and to the nonmedical reader who is interested in any phase of social welfare.

DU GLAUCOME ET DE L'HYPTONIE. Leur Traitement Chirurgical Par le professeur Felix Lagrange, Associe National de L'Academie de Medecine. Paper Price 28 francs Pp 452 with 110 illustrations Paris Octave Doin 1922

This aims to cover the entire subject of glaucoma, but a goodly portion of the book is devoted to considerations affecting the author's procedure of sclerectomy. This consists of the removal by scissors or punch forceps of a strip of sclera along the upper edge of the anterior flap of the wound one makes in the corneal section for cataract extraction. The author has modified the section by turning the knife sharply backward at the upper part of the anterior chamber to go posterior to the innermost anterior angle of the sclera before coming on out through the limbus. The ciliary muscle is thus cut away from its attachment to the scleral spur and this structure in turn excised along with layers external to it by the sclerectomy. The new path of the aqueous is then out over the ciliary muscle into the suprachoroidal space as well as through the fistulous tract leading into the conjunctival bleb whence absorption takes place through the adjoining conjunctival vessels. A table of 104 cases from one to nine years after operation is given along with convincing data to show that eighty nine were successful. In the fifteen unsuccessful cases lack of success was due in eight cases to cataract formation (though four patients were later given good vision by extraction) twice to optic atrophy and in the remaining five to retinal hemorrhage, anterior chamber hemorrhage, rapid decrease of vision, acute glaucoma and too small a sclerectomy. Contrasted with Elliot's corneoscleral trephining Lagrange asserts that there is no danger of injuring the ciliary body, less danger of closure of the fistulous opening by proliferation of corneal tissue (for only sclera is excised), and that late infection does not occur. He advises iridectomy for acute glaucoma, sclerectomy with peripheral iridectomy in chronic glaucoma with constant high tension and simple sclerectomy for the intermittent low tension of simple glaucoma. Rather too much of the reader's time is taken up with the author's claim of priority in the introduction of a fistulization operation for glaucoma. The facts seem to be that Lagrange described his sclerectomy for glaucoma in 1905 and that Elliot did his first trephine operation in 1909. If these are the facts Lagrange is entitled to more credit than he claims he has received in many English and American publications. The treatise is interesting too outside of the operative features. The author defines glaucoma as "a dystrophy of the eye characterized anatomically by vascular and nervous degenerations and clinically by a hypertension following hypersecretion and is the result of the union of hypersecretion and hypoexcretion, and insists that the glaucomatous eye is a sick eye in a sick body." Secondary glaucoma he classifies as a false glaucoma. In the development of glaucoma he considers that there is a neuropathy producing a hypersecretion as first postulated by Donders leading to increased tension when, as shown by Knies, the anterior chamber angle becomes blocked. He believes that vascular changes in the nerve account for cases of progressive atrophy of the optic nerve and blindness after normal tension have been restored and describes sections to prove his theory. He thus joins the growing list of authorities who support Donders Knies and Schnabel in the theory of a cavernous atrophy independent of tension. He holds that the "great trio" of glaucoma, namely, he emphasizes the importance of the scotoma and the diminution of the light.

approaches the fixation point he advises operation. Irdec-tomy sometimes hastens final blindness, for some unknown reason, but sclerectomy does not. Not the least interesting part of the book is that devoted to hypotony. A tension of less than 16 the author considers pathologic and says that it is of great frequency in high myopia, even when uncomplicated by detachment of the retina. He has devised a procedure which he terms calmatage to increase tension by a slow partial blockage of the angle of the anterior chamber. The conjunctiva above or below the cornea is resected in a large flap, hinged at the corneal margin, and multiple ignipuncture is carried out part way through the outer sclera layers. In animals this sets up a low grade fibrous proliferation in the sclera both in the outer looser layers and in the deeper layers, bringing about a more compact state of the structures through which run the vessels draining the aqueous out of Schlemm's canal. The procedure is carried out in two sittings and is followed by a course of subconjunctival injection of salt or mercury intended to intensify the reaction. Tension increases up to ten days and then relapses to the first reading, but after six months a final higher tension is established and maintained well above the former pathologically low state. Detailed records of thirty such cases are given. They include three of high myopia and twenty-two cases of myopia complicated by detachment of the retina, and five other cases of detachment with low tension. All were improved with an average rise from 10 to 22, according to the Schiötz tonometer. All considered, the book is well worth reading.

INFANTILE CIRRHOSIS OF LIVER. By Santosh Kumar Mukherji. M B M R A S. Lecturer National Medical College of India and King's Hospital. With a Foreword by Major General B. H. Deane. C. I. E. M. R. C. P. D. P. H. Surgeon General of Bengal. Cloth. Price rupees 2.80. Pp. 95. Calcutta: Indian Medical Record Book Dept. 1922.

This interesting little book takes up a subject that is almost entirely unknown to American readers. The type of cirrhosis described is apparently peculiar to the southern part of India. Its importance there is revealed by statistics showing that the number of deaths in Calcutta since 1908 has varied between 727 and 561 a year, almost all of these occurring in children under 5 years of age. The book is based on a study of forty-eight cases and five necropsies. The author regards the condition as an intercellular cirrhosis of the liver. He thinks that the condition is due to dietetic errors occurring in children either totally or partially artificially fed. The symptoms are well presented, as is the subject of differential diagnosis. With the usual means of treatment, the patients nearly all die, but at least a fair percentage can be saved if a rational diet is given, hygienic conditions are improved and cholagogues are used. On the whole, the book should prove interesting to one who wishes first-hand knowledge of a disease about which we know little or nothing.

AN OUTLINE OF THE MEDICAL SERVICE OF THE THEATRE OF OPERATIONS. By M. A. W. Shockley. Cloth. Price, \$2.50. Pp. 230. Philadelphia: P. Blakiston's Son & Co. 1922.

This book presents the gist of the lectures given at the United States Army general service schools during the 1919, 1920 and 1921 sessions. It is a textbook for line and medical officers who have shown the ability to organize and administer military organizations. The author therefore assumes that his reader has had considerable experience, and has omitted many purely medical details that would have made the book more interesting. There are formulas for estimating the number of battle casualties, the time that will be required to evacuate the wounded, and the amount of transportation and the number of hospital beds that will be needed. There are tables of reference of noted battles in various wars to show the percentage of wounds in different anatomic regions in offensive and defensive fighting. The duties of different medical offices in the theater of combat are tabulated, and seem hard and fast, but in actual campaign there is unlimited opportunity to do much more. There are specimens of the types or orders affecting the medical department and the usual sketches showing the disposition of medical units in battle. The latter are separate sheets that fit into a pocket for notes in the binding of the book. The medical

service tactical and administrative doctrine contained has been coordinated with combatant doctrine by actual test, and conforms to the doctrine of the Surgeon General's Office. Only 6 per cent of the total number of medical officers in the World War were regular officers. This book shows why they were detailed mostly to administrative positions.

LEOPOLD AUENBRUGGER'S INVENTUM NOVUM. Facsimile nach der ersten Ausgabe. Begleitet von der Französischen Uebersetzung Corvisart's, der Englischen von Forbes der Deutschen von Ungar. Herausgegeben und mit einer biographischen Skizze versehen von r. Max Neuburger. O. Ö. Professor an der Universität Wien. Boards. Price, \$5. Three illustrations. Vienna: Josef Saffar. 1922.

This book opens with a steel engraving of Auenbrugger, who was born in 1722. Following is a facsimile reproduction of the original Latin text of 1761. Next is a steel engraving of Corvisart and a facsimile reproduction of the 1808 translation into French which he made of Auenbrugger's work. The third part is a reproduction of the translation made by John Forbes into English and published in London in 1824. The fourth section is a translation into German made by S. Ungar and published in Vienna in 1843. The book is completed with a portrait of Auenbrugger and a historical sketch in German by Max Neuburger.

It is hardly necessary to remind medical readers of the importance of Auenbrugger's discovery of the art of percussion in the diagnosis of disease. In his preface occurs the famous line which should be the guide of every medical writer:

In making public my discoveries respecting this matter I have been actuated neither by an itch for writing nor a fondness for speculation, but by the desire of submitting to my brethren the fruits of seven years' observation and reflexion.

and further

In drawing up my little work I have omitted many things that were doubtful and not sufficiently digested to the due perfection of which it will be my endeavour henceforth to apply myself. To conclude I have not been ambitious of ornament in my mode or style of writing being contented if I shall be understood.

Dr. Neuburger suggests that perhaps Auenbrugger's work was based on the fact that while young he had observed the tapping on casks to determine the amount of fluid in them, since the boy was the son of an innkeeper. It is well known, too, that some of the ancients had spoken of percussion for ascites and for determining the presence of fracture. Auenbrugger, however, was the first to percuss the thorax systematically for the determination of various normal and pathologic signs, and to outline a system for routine percussion in physical diagnosis. He was a man of clear brain and calm passions. Today the whole medical world accepts without question his right to a position as one of the great founders of the art of scientific diagnosis.

DISEASES OF INFANCY AND CHILDHOOD. THEIR DIETETIC, HYGIENIC AND MEDICAL TREATMENT. A Text Book Designed for Practitioners and Students in Medicine. In two volumes. By Louis Fischer, M.D., Attending Physician to the Willard Parker and Riverside Hospitals of New York. Volume I: Infant Feeding and Organic Diseases. Ninth edition. Cloth. Price, \$12 per set of two volumes. Philadelphia: F. A. Davis Company, 1922.

The new edition contains a revision of a great deal of material contained in previous volumes, which enhances its value. The book is to be recommended as a practical work. Part 6 has an excellent chapter on anaphylaxis and allergy, also a chapter on bacterial vaccines, which is open to criticism because of the optimism expressed by the author, which is, however, based largely on his individual experience.

CONSEJOS PRACTICOS DE HIGIENE INFANTIL. Por el Dr. José J. Callejas. Paper. Pp. 223 with illustrations. Comayagüela, Honduras: Imprenta El Sol. 1922.

Surprised at the large number of children dying in Central America, the author decided to look into the causes and point out the possible remedy. This he has striven to do in the present book, one of practical advice on child hygiene. Without aiming at originality or beauty of style, he has accomplished a useful piece of work in a publication intended especially for Central American mothers, and reviewing all the factors that affect child welfare from conception to the period of youth.

relied, in order to show the reasonableness or unreasonableness of the opinion expressed, and to test its value. His attention may be called to any fact, omitted from the hypothetical question asked on direct examination, or the facts stated in the hypothetical question which are deemed unimportant may be sifted out. The data on which the expert rests his specific opinion (as distinguished from the facts which make him skilful to form one at all) may be fully inquired into on cross-examination. Without them, the value of the opinion cannot be estimated.

Two Questions for Jury in Action on Account

(*Geiger v Gillespie (Ala.) 93 So R 412*)

The Supreme Court of Alabama says in this case, which was transferred to it from the court of appeals, that the plaintiff, a physician, sued the defendant to recover for professional services rendered to the latter's daughter. One of the counts of the complaint was on an open account, another on an account stated, and the remaining count for professional services rendered by the plaintiff for the defendant, at the instance and request of the defendant. The cause was tried on these counts and the plea of general issue, together with a plea of the Alabama statute of limitation of three years. The result was a judgment for the plaintiff, which is here affirmed. The only question argued on this appeal related to the insistence that an affirmative charge was due the defendant on the whole case, on the theory that more than three years had expired from the time the services were rendered, and that there had been no agreement on the part of the defendant to pay the plaintiff. But there was evidence for the plaintiff which tended to show that the account sued on was rendered by him to the defendant, and that the latter retained this account without objection of any character—the services having been rendered in January, 1916, and the statement having been rendered the defendant in May, 1918. The evidence was in conflict, however, as to any objection on the part of the defendant, and the issue of fact thus presented was properly left for the determination of the jury. It therefore appeared that the affirmative charge was not due the defendant as for an account stated. Moreover, one of the counts of the complaint rested for recovery on a special contract between the parties as to the services rendered, which was supported by the testimony of another physician, who was a witness for the plaintiff. The issues presented by this count were also properly submitted to the jury. This court finds no reversible error.

No Award When Employer Authorizes Services

(*Integrity Mutual Casualty Co et al v State Industrial Commission et al (Okla.) 209 Pac R 653*)

The Supreme Court of Oklahoma, in reversing an award of \$600 made by the state industrial commission to a physician who had attended an injured employee of a company, and made after awards had been made to the employee which included \$850 for medical services, says that the employee's injuries were such that it was necessary to operate on the brain to restore him to consciousness. The attending physician did not feel capable of performing the operation, and suggested to the president and general manager of the company that a specialist from Chicago be employed to perform the operation. The president agreed to this, and a specialist was employed. The insurance carrier under the workmen's compensation act, on being informed of the employment of the surgeon, objected to it, and stated that it would not pay for his services whereupon the attending physician replied that he would pay for them himself. The insurance carrier tendered the services of another surgeon, which were refused. The award made of \$600 was to reimburse the attending physician for money paid by him to the specialist from Chicago.

Under the provisions of the workmen's compensation act of Oklahoma, if the employer furnishes medical services, he becomes liable to the physician on contract. If he neglects or refuses to furnish these services after being requested to do so, the injured employee may secure services at the expense of the employer, and the employer becomes liable

therefor under the act, and the fees and charges for these services are subject to regulation by the commission. But it is only the provisions of the law that the commission has jurisdiction to enforce. It is without power to enforce a contract between the employer and the physician employed by him.

Had the employer in this case refused or neglected to furnish medical services after being requested to do so by the injured employee, or under the circumstances surrounding this case by some one for him, then the employee, or some one for him, might have procured services, and the expenses thereof should have been included in the award to the employee, if approved by the commission, and the claim of the physician therefor would have become a lien on the compensation awarded, and should be paid therefrom in the manner fixed by the commission. But the record disclosed that the employer did not neglect or refuse to furnish medical services, but to the contrary did everything possible to furnish the best surgical skill obtainable, and requested the attending physician to procure the services of a specialist to perform the needed operation. Obviously, this created a contractual relation between the physician and the employer, and if the employer refused to pay for the services furnished, the physician had his remedy by appropriate action in the proper court.

Wherefore the supreme court concludes that the industrial commission was without jurisdiction to make the order or award complained of, and the same is reversed and the cause remanded with directions to dismiss the claim.

Power Inherent in Cities to Erect City Hospitals

(*Cummock v City of Little Rock et al (Ark.), 243 S W R 57*)

The Supreme Court of Arkansas, in affirming a decree that sustained a demurrer to a complaint that asked that the defendants be enjoined from proceeding with the erection of a city hospital, holds that the city had the power to erect a city hospital, under the general welfare clause of the statute of that state which provides that municipal corporations shall have the power to make and publish such ordinances, not inconsistent with the laws of the state, as to them shall seem necessary in order to provide for the safety, preserve the health, and improve the comfort and convenience of such corporations and their inhabitants. The court says that it is also of the opinion that the power to erect a city hospital is a necessary incident of municipal life. In a growing city, a city hospital may be necessary for the preservation of the public health and the care of sick paupers. This court can see no difference in principle between the right of a city to erect and maintain a hospital and to erect and use city halls, jails and the like. Most cities of any considerable magnitude have city hospitals which are subject to the regulation of their own local authorities. It is true there is express statutory authority to erect them in many of the states, but this court is also of the opinion that such authority is essential to carry out the object and purposes of organizing municipal corporations. A municipality is a governmental agency, and in cities the erection of hospitals to preserve the public health and to care for indigent people within its borders is highly essential, and may be absolutely necessary.

Society Proceedings

COMING MEETINGS

Alabama Medical Association of the State of Mobile April 17 20
Dr H G Perry State Board of Health Montgomery Secretary
American Association of Anatomists Chicago March 28 30 Dr Lewis
H Weed Johns Hopkins Medical School Baltimore Secretary
American Association of Pathologists and Bacteriologists Boston March
29 30 Dr H T Karsner Lakeside Hospital Cleveland Secretary
Louisiana State Medical Society New Orleans April 10 12 Dr P T
Talbot, 1551 Canal Street New Orleans Secretary
North Carolina Medical Society of the State of Asheville April 17 19
Dr L B McBrayer Sanatorium Secretary
South Carolina Medical Association Charleston, April 17 19 Dr
Edgar A Hines Seneca Secretary
Tennessee State Medical Association Nashville April 10 12 Dr Larkin
Smith 154 Eighth Avenue N Nashville

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below

American Journal of Hygiene, Baltimore

January 1923 3, No 1

- Control of Hookworm Disease XII Studies on Occurrence Distribution and Morphology of *Necator* Suillus Including Descriptions of Other Species of *Necator* J E Ackert and F K Payne Baltimore—p 1
- *Control of Hookworm Disease XIII Conditions Under Which Hookworm Eggs and Larvae Develop J E Ackert Baltimore—p 26
- *Treatment of Hookworm Disease with Carbon Tetrachlorid W G Smillie and S B Pessoa Sao Paulo Brazil—p 35
- Control of Hookworm Disease XIV Field Experiments on Vertical Migration of Hookworm Larvae F K Payne Baltimore—p 46
- Control of Hookworm Disease XV Effective Method of Counting Hookworm Eggs in Feces N R Stoll, Baltimore—p 59
- *Age at Death of Parents of Tuberculous and Cancerous Persons R Pearl Baltimore—p 71

Control of Hookworm Disease—The results obtained from covering soil pollution with clay loam indicate that the custom of covering human waste with 2 inches or less of clay loam is unsuccessful as a control measure against hookworm disease. The results of tests made by Ackert in which hookworm eggs in soil pollution were buried under 4 inches and under 5½ inches of clay loam showed that the eggs produced infective larvae, that the larvae migrated to the upper part of the culture, and that the eggs remained viable for fifty-eight days. The custom of covering soil pollution containing hookworm eggs with a thin layer of wood or charcoal ashes is ineffective as a control measure, as large numbers of infective larvae developed in stools wholly surrounded by the ashes. Moreover, the larvae lived deep in the cultures for over three weeks.

Treatment of Hookworm Disease with Carbon Tetrachlorid—Carbon tetrachlorid administered in 3 c.c. doses to adults was found by Smillie and Pessoa to be an extremely efficient drug in the removal of hookworms (*Necator americanus*). A single treatment will remove more than 95 per cent of all hookworms harbored. Larger doses than 3 c.c. are unnecessary and may be dangerous. Carbon tetrachlorid has a toxic action on the host, similar to that of chloroform. The first stages are dizziness, slight nausea, headache, and somnolence. These are usually transient. A later and more serious manifestation is fatty degeneration of the liver, which first manifests itself two or three days after treatment. This condition rarely occurs and is seldom fatal. There is a wide variation in individual reaction to carbon tetrachlorid. Large doses, from 10 to 20 c.c., have been given to adults without producing apparent ill effects. Alcoholics are especially susceptible to the toxic action of the drug, so small a dose as 15 c.c. has produced severe toxic symptoms in an acute alcoholic.

Age at Death of Parents of Tuberculosis and Cancer Patients—A study made by Pearl of the question of the ages at death of the parents of the tuberculous and the cancerous, on the basis of critically collected new material shows that, for completed lives (parents dead), the mean age at death of the parents of a group of tuberculous persons is significantly, but not greatly (from 2 to 4 years), lower than the mean age at death of the parents of a group of nontuberculous persons having the same age distribution as the tuberculous group. The same thing is true of the fathers of a group of cancerous persons. The experience for mothers of the cancerous is too meager to give definite results. In so far as duration of life may be taken statistically as an indicator of soundness of biologic constitution it follows that in some degree though not considerably both the tuberculous and the cancerous are of weaker stock constitutionally than those not having these diseases. Incidentally the results of this investigation, as they are interpreted by Pearl furnish new evidence of a different sort than any heretofore offered, on the question of the inheritance or duration of life.

Archives of Neurology and Psychiatry, Chicago

January 1923 9 No 1

- *Physiologic Effects and Clinical Results of Section of Anterolateral Columns of Spinal Cord (Chordotomy) C. H. Frazier and W. G. Spiller Philadelphia—p 1
- *Pathology in Case of Epidemic Encephalitis Complicated by Psychosis G. B. Hassin Chicago and D. B. Rotman Dunning Ill—p 2
- *Neurosyphilis Among Chinese Findings in Sixty Five Cases W. G. Lennox Peking China—p 26
- *Study of Four Cases of Glossopharyngeal Neuralgia J. B. Dole Rochester Minn—p 34
- Lesions in Brain of Patient with Postencephalitic Paralysis Agitans J. C. McKinley Minneapolis—p 47
- *Pathologic Findings in Heart Muscle in Progressive Muscular Dystrophy J. H. Globus New York—p 59
- *Sex Development and Behavior in Male Patients with Dementia Praecox C. E. Gibbs Ward's Island N. Y.—p 73
- *Spirochete Stain in Multiple Sclerosis G. S. Stevenson Ward's Island N. Y.—p 88

Results of Chordotomy—Frazier and Spiller report eight cases in which chordotomy has been performed. In one case the operation was performed three separate times on the same side of the cord. The operation abolished the pain for which it was performed in six and gave decided relief from pain in the remaining two cases. Four were cases of malignant tumor. The authors are convinced that this operation, when successfully performed destroys pain, heat and cold sensations in the lower limbs and lower part of the trunk when performed at the proper level, although the impairment of these sensations is less intense over the abdomen in some cases, probably because some fibers have not decussated at the level of the incision. In some cases they have observed that certain fibers innervating the lower limbs for pain and temperature sensations escape in the division of the anterolateral columns. The bladder and rectum almost invariably escape damage in this operation. One might possibly expect sympathetic fibers for the bladder and rectum to be in the anterolateral columns and to be impaired by this operation but it has seemed to the authors that when such disturbance occurs from a spinal cord lesion the crossed pyramidal tracts are damaged. They are inclined to believe that in the male impairment of sexual power possibly may result in the manner suggested. In one case in which unilateral chordotomy was performed sexual power was lost. The marked impairment of pain and temperature sensations after chordotomy at the fifth thoracic segment usually is pronounced to about 2 inches (508 cm.) above a line passing through the umbilicus, and gradually shades off above this region. While pressure sensation is preserved it is without any association with pain sensation.

Pathology of Epidemic Encephalitis Complicated by Psychosis—In the case described by Hassin and Rotman there was a combination of diffuse inflammatory and degenerative phenomena especially in the basal ganglia and midbrain. The infiltrations were not so pronounced as in acute cases of epidemic encephalitis and the proliferative changes were not so marked as in so called productive encephalitis (caused for instance by lead or arsenic). Resembling in the combination of inflammatory and degenerative changes the findings in general paralysis of the insane this case differs from the latter in the comparatively mild involvement of the cortex. The inflammatory changes in the basal ganglia and midbrain could perhaps explain the nervous manifestation (ocular paralysis parkinsonian mask) while the diffuse degenerative phenomena in the cortex were most likely responsible for the patient's mental condition. It is obvious that degenerative lesions are a serious complication of epidemic encephalitis much more serious than the inflammatory changes. The latter may subside or disappear entirely leaving no permanent disability in contrast to a degenerative process which however mild may produce more or less troublesome complication of which the most dangerous is mental disturbance.

Neurosyphilis in Chinese—Sixty five cases of neurosyphilis are reported by Lennox in which spinal fluid examination confirmed the clinical diagnosis of syphilis. The views of individual observers and reports of general hospitals show that in China syphilis is relatively more common than in America. Syphilis is relatively less common than in America. One explanation for this apparent racial discrimination is

says, is the probability that many cases of neurosyphilis among the Chinese have been overlooked. In a teaching hospital in Peking, search for these cases revealed a proportion comparable with that found in teaching hospitals in America. An unusual proportion of the Chinese patients have cord lesions of vascular origin.

Glossopharyngeal Neuralgia Is a Clinical Entity—Doyle's observation of four cases leads him to conclude that glossopharyngeal neuralgia is a definite clinical entity, differing from trifacial neuralgia only in the area of distribution of pain. He is convinced that the different fibers of the sphenopalatine ganglion concerned with the innervation of the nasopharynx are not derived from the trigeminal nerve.

Changes in Heart Muscle in Progressive Muscular Dystrophy—The heart in Globus' case was somewhat smaller than normal, the left ventricle was well contracted and empty, the right ventricle was dilated and filled with blood. The subepicardial fat was somewhat increased, and some fatty streakings were found under the endocardium. The heart muscle was pale, yellowish red, flabby and friable. On section, the wall of the left ventricle showed many translucent patches, irregularly distributed. These patches bore no relation in the coronary or smaller vessels. The coronary vessels showed no pathologic change. Preparations from the wall of the left ventricle showed many connective tissue scars, varying in size. They had not involved the perimysium externum, but were apparently produced mainly by proliferation of connective tissue in the perimysium internum, leading to the isolation of individual muscle fibers and fragmentation of muscle fibers. In younger, advancing scars small round fixed connective "tissue cells" were seen in large numbers. Fat infiltration was found in the connective tissue scars and about the blood vessels, as it was in the skeletal muscles. As the degenerative process and the process of fibrosis were relatively mild in the heart, so the fat infiltration was rather meager. A larger amount of fat was under the epicardium, but this cannot be considered entirely pathologic. Another feature, not unlike the pathologic change in the skeletal muscles, was the accumulation of many small round cells in the connective tissue trabeculae, in the fibrous scars and, in a few instances, in the proximity of blood vessels. Changes in the muscle fibers themselves were also observed. They partook mainly of the character of edema and swelling of some fibers, atrophy of others, with hyalinization and fragmentation. Aschoff bodies were not found in the cardiac lesion described.

Sex Studies in Male Dementia Praecox Patients—The findings obtained by Gibbs in a study of 325 male dementia praecox patients indicate a disturbance of sexual development and a failure of sexual maturity which is most marked in patients admitted to the hospital during the years of puberty and adolescence. Patients admitted at an early age give the impression of unevenness of sexual growth, the development of the secondary sexual characters lagging behind that of the testes. These patients seem to lack the finishing touches of complete physical maturity. Only 20.5 per cent of the patients had reached an adult level of sex behavior and maintained it for even a short time, either married or single.

Spirochete Stain in Multiple Sclerosis—In the study of thirty-seven sections from four cases of multiple sclerosis stained by Jahnke's new method, no spirochetes were found by Stevenson.

Boston Medical and Surgical Journal

Jan. 23, 1923 188 No. 4

- *Convalescence. II. Problem in Preventive Medicine and Public Health. J. Bryant Boston—p. 99
- *Pellagra in Massachusetts. G. C. Shattuck Boston—p. 110

Management of Convalescence A Public Health Problem—Bryant emphasizes the wisdom and necessity for better private and community care of the convalescent patient, for today, as in the past, the convalescent patient suffers from clinical neglect. This clinical neglect is, at least in some degree, due to failure on the part of the medical profession to take into consideration a time factor fundamental in all medicine. There can be no doubt that the medical profession, under suspicion of neglecting its duty and opportunity in

regard to convalescence. Convalescent care, when properly applied, hastens and completes recovery of the patient, frees acute hospital beds for their proper use, saves money to the community and saves the medical profession from the now too frequently justifiable reproach of clinical neglect of the convalescent patient. Convalescent care may be applied within a general hospital, through an outpatient department, in the home of the patient, and in an organized convalescent home. Maximum efficiency in such a home results only when medical therapy, occupational therapy, physiotherapy, and social service factors work harmoniously together under the directions of a physician skilled in convalescent methods, one who does not assume responsibility for patients acutely ill, and who must in all matters of medical policy be independent of those in control of the acute medical and surgical services of the general hospitals. Bryant predicts the development of a future state wide organization which will have as its objective, the efficient application of available modern methods to the problem of caring for convalescent patients. An organization such as that anticipated could to advantage operate through the medium of large country convalescent centers which, though based on the larger cities, would be available to patients from the smaller towns within a motor transport radius of 20 miles from each such convalescent center.

Pellagra in Massachusetts—The number of cases (136) of pellagra found by Shattuck in state and hospital records shows that pellagra is by no means rare in Massachusetts. Pellagra has been reported from nearly all the counties of the state. That most of the pellagra in Massachusetts originates within the state is shown by the fact that the great majority of cases developed in residents of the state and in the native born. Pellagra has been most common where population is densest. The mill towns show no disproportionate number of cases. In Massachusetts, women have been affected in much larger proportions than have men. The occupations of both male and female pellagrins have been studied. Among females, housewives markedly predominated, and among males the largest group of cases developed among unskilled laborers. These are the predominant types of work of the two sexes. Persons engaged in a great variety of occupations have developed the disease, and the observations do not indicate an association of liability to pellagra with any special occupation. The skin lesions of pellagra in Massachusetts most often appear in July but, apparently, they may develop for the first time in any month of the year.

Canadian Medical Association Journal, Montreal

January 1923 13, No. 1

- Medical Education and the Ontario Medical Association. J. H. Mullin—p. 2
- Treatment of Nephritis. E. H. Mason—p. 6
- Tumors of Kidney. H. A. Bruce—p. 13
- *Tuberculosis of Intestine. Ulcerative Form. Phase of Pulmonary Tuberculosis. D. A. Stewart—p. 20
- Cancer of Stomach. F. N. G. Starr—p. 24
- Cranial and Intracranial Injuries. C. K. P. Henry—p. 26
- Pneumonia. G. G. Melvin—p. 30
- Hemolytic Streptococcal Infections in Children. I. H. Erb—p. 32
- Baneful Cathartic After Abdominal Operations. C. A. Howard—p. 36
- Analysis of Sixty Cases of Gastric Anacidity Associated Mainly with Chronic Diarrhea and Pernicious Anemia. C. Hunter—p. 38
- Acrotychia (?). Report of Three Cases. A. F. McKenzie—p. 43
- Echinococcus Cysts of Liver in Girl Ten Years Old. H. M. Young—p. 48
- Nitrous Oxide. W. Bourne—p. 50

Tuberculosis of Intestine, Ulcerative Form—Stewart believes that intestinal ulceration, tuberculous in origin, is found in a fairly wide percentage of cases of pulmonary tuberculosis. It is likely implanted early perhaps earlier than the lung lesion. It is almost universally present in the late stages of pulmonary disease, and hastens, or perhaps causes, death. It is treatable and even curable in its early stages. Early diagnosis, especially of disease in the small intestine, is not yet satisfactory, but much can be done by careful study of symptoms and giving the opaque meal and an enema. Surgical treatment is suitable in some cases, but is of limited applicability. The most promising treatment at present would seem to be the use of the ultraviolet ray, given by the quartz lamp, using, perhaps, the roentgen ray as well.

Florida Medical Association Journal, St. Augustine and Jacksonville

November 1922 9, No 5

- Function of Tonsil and Plea for More Conservative Treatment of Chronic Tonsillitis M Price Key West Fla.—p 81
Management of Children with Heart Disease W S Coleman Miami Fla.—p 83
Granuloma Inguinale G J Oetgen Jacksonville.—p 84
Fractures R A Ely Tampa Fla.—p 89
Case of Unusual Susceptibility to Diphtheria P Crumpler Clinton N C.—p 91

Journal of Biological Chemistry, Baltimore

January 1923 55 No 1

- Lead Studies II Electrolytic Determination of Lead in Biologic Material A S Minot Boston.—p 1
Hydrolysis of Yeast Nucleic Acid with Dilute Alkali at Room Temperature (Conditions of Steudel and Peiser) P A Levene New York.—p 9
Chemical Defense Mechanism of Fowl J H Crowdle and C P Sherwin New York.—p 15
Study of Adequacy of Certain Synthetic Diets for Nutrition of Pigeons K. Sugiyama and S R Benedict New York.—p 33
Potassium in Animal Nutrition I Influence of Potassium on Urinary Sodium and Chlorine Excretion H G Miller Madison Wis.—p 45
Potassium in Animal Nutrition II Potassium in Its Relation to Growth of Young Rats H G Miller Madison Wis.—p 61
Occurrence of Copper and Zinc in Certain Marine Animals H W Severy Palo Alto Calif.—p 79

Journal of General Physiology, Baltimore

January 1923 5 No 3

- Studies on Bioluminescence XV Electroreduction of Oxyluciferin E N Harvey Princeton N J.—p 275
Growth and Respiration of Sulphur Oxidizing Bacteria S A Waksman and R L Starkey New Brunswick N J.—p 285
Phagocytosis of Solid Particles IV Carbon and Quartz in Solutions of Varying Acidity W O Fenn Boston.—p 311
Muscle Tension and Reflexes in Earthworm A R Moore New Brunswick N J.—p 327
Study of Equilibrium Between So-Called Antitrypsin of the Blood and Trypsin R G Hussey and J H Northrop New York.—p 335
*Method for Quantitative Determination of Trypsin and Pepsin J H Northrop and R G Hussey New York.—p 353
Influence of Salts When Injected into Animal Body R G Hussey New York.—p 359
Conductivity as Measure of Vitality and Death S C Brooks Washington D C.—p 365
Ionization of Protein Chlorides D I Hitchcock New York.—p 383
Influence of Electrolytes on Cataphoretic Charge of Colloidal Particles and Stability of Their Suspensions. II Experiments with Particles of Gelatin, Casein and Denatured Egg Albumin J Loeb New York.—p 395

Quantitative Determination of Trypsin and Pepsin—A quantitative method is described by Northrop and Hussey which permits a determination of the relative amount of trypsin or pepsin present in a gelatin-enzyme digestion mixture, provided the gelatin and trypsin solutions are purified. This method is dependent on the change in viscosity of such solutions. It is found that the time required to cause a given percentage change in the viscosity is nearly inversely proportional to the amount of enzyme present. It is pointed out that the particular value of the method lies in the fact that enzyme reactions which take place in the presence of 'buffer' salts may be studied

Journal of Laboratory and Clinical Medicine, St. Louis

January 1923 8, No 4

- *Nontoxicity and Antipruritic Efficiency of Tolysin (Ethyl Ester of Paramethylphenylacetic Acid) H G Barbour and E Lozinsky Montreal.—p 217
*Excretion of Sugar in Urine in Health and Disease L Kast H M Croll and V C Myers New York City.—p 227
*Etiology of Gallstones S F Oliver Cincinnati.—p 242
*Cresylecht Violet A Rare Dye. B G R Williams Part III.—p 250
Determination of Urea in Blood by Folin and Wu Method A Modified Apparatus G G Boggs and W S McElroy Pittsburgh.—p 254
Technical Principles in Radial Transmission Sphygmography H M Korns and E J Warnick, Cleveland.—p 266
*Case of Chronic Hydrocyanic Acid Poisoning J Rosenbloom, Pittsburgh.—p 258
Fatal Case of Lactic Acid Bacillus Meningitis with Necropsy Findings and Review of Bacillus Mucosus Infection H M Ray Pittsburgh.—p 260
*Relative Value of Some of Commonly Used Methods for Detection of Occult Blood in Stool H A Reimann Buffalo.—p 265
*Quantitative Estimation of Iodine in Urine H L March Chicago.—p 271
Simple Method for Calculating Basal Metabolic Rate H L Haden Kansas City Kan.—p 272

- Apparatus for Cleaning Blood Counting Pipets R L Had n Kansas City Kan.—p 276
*Formaldehyd Test in Syphilis. D A Hohr on Cincinnati.—p 277
Suggestion for Practical Spirometer Valve. G A Broach Ch nago.—p 278
Concerning Specificity of Cholesterinized Antigens in Serologic Diagnosis of Syphilis Third Communication R A Kilduffe, Pittsburgh.—p 279

Nontoxicity of Tolysin—Barbour and Lozinsky found that the ethyl ester of paramethylphenylacetic acid (tolysin) given by mouth, even up to doses of 50 gm per kilogram or 5 per cent of the animal's own weight produces no effect on the general condition of dogs. Tolysin seems to be the least toxic of all substances of demonstrated antirheumatic efficiency. Tolysin exhibits a peculiarity in pharmacologic behavior in that the maximum limit of absorption from the intestine coincides essentially with full therapeutic doses. As cumulation is evidently absent, indefinitely large amounts are nontoxic at least for dogs.

Excretion of Sugar in Urine—A comparative study of different methods for the determination of sugar in normal urine has been made by Kast, Croll and Myers. By the use of one of these methods that of Benedict and Osterberg it was shown that there is an increase in the amount of reducing sugar excreted hourly after meals. It was found that a diet rich in carbohydrates increases the amount of sugar excreted over that on a low carbohydrate diet. The daily excretion of reducing sugar in the urine was determined in twelve normal persons and 140 hospital patients. In none of the diseases studied, except diabetes mellitus, was there any marked variation from the normal sugar excretion on ordinary diets. Moreover in diabetes when by dietary regulation the patient is rendered sugar free the daily amount of sugar excreted is virtually normal.

Etiology of Gallstones—Oliver summarizes his paper as follows. It would seem that in cases of gallstones and obstructive jaundice, a disturbance in bile salt secretion and excretion occurs. This manifests itself by an increase in bile salts in the urine and blood and a decrease in the bile salt content of the bile. As a result of the deficiency in the bile salt content of the bile cholesterol tends to settle out of solution. If the condition is not early remedied gallstones form the end result of this physicochemical disturbance. Further the increase in bile salts in the blood leads to toxic changes in other organs notably the kidneys and heart and also profound constitutional disturbances of a toxic nature. In all cases of cholemia, hepatic insufficiency is present.

Cresylecht Violet—In Williams hands this stain proved of promise in two kinds of pathologic work. (1) in the so-called biopsy, where unfixed tissues are stained for purpose of rapid diagnosis, (2) in diagnostic tissue work or fairly rapid work with frozen liquor formaldehyde fixed tissues where a metachromatic stain saves time and where many sections can be handled quickly often avoiding double staining mounting etc. or in case special double staining is wished in any particular section it may be destained rapidly in alcohol and stained as wished for a mount. By this method a dozen sections can be studied in the same time that the more elaborate methods will give one or two. Moreover such a method is of particular value when the diagnosis is fairly easy when the interested parties are impatient for a diagnosis and when section should be examined from a number of portions of the neoplasm.

Symptoms of Chronic Hydrocyanic Acid Poisoning—Loss of energy vomiting every meal shortly after its ingestion and secondary anemia Rosenbloom says are the early symptoms of chronic cyanid poisoning.

Detection of Occult Blood in Stool—The most reliable and convenient test for occult blood in the stool at the present opinion is the Gregerson benzidin technique. The guaiac test in conjunction with it is recommended in order to gain some idea of the quantity of blood in the stool present be between 1 and 5 cc. The spectroscopic test is not recommended for the detection of traces of blood.

Estimation of Iodine in Urine—March consists of first the halogens in the residue from a Volhard-Arnold volumetric

tion of the chlorids (Volhard Arnold) in another fused sample from which the iodine has been removed by the classical method of Gooch. The difference between the total halogens and the chlorids represents the iodine present in the sample of urine.

Formaldehyd Test in Syphilis—This test was used by Johnston in 100 cases of insanity. In 27 per cent the Wassermann reaction was plus, in 23 per cent the formaldehyd test was plus, in 12 per cent the two tests corresponded, in 11 per cent the formaldehyd test was plus with negative Wassermann reactions, in 15 per cent the Wassermann test was positive with a negative formaldehyd test.

Minnesota Medicine, St Paul

January 1923 6, No 1

- Diagnosis of Gastric and Duodenal Ulcer Without Aid of Laboratory and Roentgen Ray O J Hagen Moorhead—p 1
Treatment of Duodenal Ulcer H S Willson, Minneapolis—p 6
*Use of Radium in Treatment of Benign Hypertrophy of Prostate W A Dennis St Paul—p 9
*Diseases Which May Be Associated with Pernicious Anemia H Z Giffin and John P Bowler Rochester Minn—p 13
*Visual Albuminuria Guide H W Cook Minneapolis—p 16
Injuries to Lower Birth Canal J R Manley, Duluth—p 18
Malingering with Vengeance W W Lewis St Paul—p 22
*II Preoperative Preparation of Patients with Obstructive Jaundice End Results in Thirty Four Cases W Walters Rochester, Minn—p 25
Choosing Anesthesia for General Surgery J M Hayes, Minneapolis—p 28
Diverticulitis of Colon J T Rogers St Paul—p 35

Radium in Hypertrophy of Prostate—Dennis reports six cases of benign hypertrophy of the prostate in which the use of radium according to Barringer's method yielded very satisfactory results. The case reports show that at least 300 or 400 milligram hours may be given a single lobe at one sitting. The six patients had a total of eleven treatments. The placing of the needles has been practically painless and there has been almost no discomfort afterward, except in three instances. In one case the presence of a needle in the prostatic urethra was responsible, and in two cases a chill with high fever followed in about five hours, but had disappeared entirely in one case the next morning, and in the other case after a few days. Dennis believes that his data offer a reasonable hope that benign prostatic hypertrophy may yet be relieved of much of its gravity, and that the perfection of the radium treatment possibly followed in large middle lobe cases by Young's simple punch operation, may eventually rob this condition of most of its terrors.

Diseases Which May Be Associated with Pernicious Anemia—In 108 of 628 cases of pernicious anemia analyzed by Giffin and Bowler, other diseases were also present, such as syphilis, hemorrhage, gallbladder disease, chronic sepsis, renal insufficiency and hypertension, carcinoma (breast, colon, uterus, esophagus and stomach), thyroid disease, tuberculosis, diabetes and intestinal parasitism. A general survey of this series of cases leads Giffin and Bowler to conclude that it is doubtful whether the complete pernicious anemia syndrome is ever seen as a result of other disease. The notable and striking exception to this statement is infestation by *Balan-tidium coli* which in the four cases in which it was present has always been accompanied by the features of pernicious anemia—glossitis, achlorhydria and subacute combined sclerosis. The absence of active tuberculosis in association with pernicious anemia is a notable feature of the series.

Visual Albuminuria Guide—By means of a chart consisting of photographic reproductions of actual tests made with known solutions of albumin from a case of nephritis, Cook has devised a visual method of estimating the degree of albuminuria.

Preoperative Preparation in Obstructive Jaundice—Thirty-four patients with obstructive jaundice were operated on after having first received the preoperative treatment suggested by Walters. None of the patients died of hemorrhage, or only two bleeding occurred from the wounds following operation. All of the patients had jaundice of 2 plus or more (on a basis of from 1 to 4), and 80 per cent were judged to be 3 or 4 by the consulting surgeon. An estimation of the coagulation time was made according to the method of Lee

and White before the administration of calcium chlorid intravenously each day and on the morning of the day of operation. If the coagulation time of the venous blood had not been lowered to less than nine minutes, operation was postponed until such reduction was obtained. Although the coagulation time of the venous blood was nine minutes or less, in some of the patients with jaundice it was thought best to administer calcium chlorid intravenously as a precaution against postoperative hemorrhage. The treatment consists of three intravenous injections of 5 cc of a 10 per cent solution of calcium chlorid.

New Orleans Medical and Surgical Journal

January, 1923 75, No 7

- Acute Osteomyelitis in Children, Report of Cases J C Willis Sr, and J C Willis Jr Shreveport La—p 337
Glandular Fever S C Jamison New Orleans—p 346
Medical Social Service for Childhood of Louisiana M Loeber, New Orleans—p 350
*Hyperemesis Gravidarum T B Sellers New Orleans—p 354
Leukemia E L Irwin New Orleans—p 366

Vomiting of Pregnancy—Sellers reports five cases. As soon as the patient is unable to retain a sufficient quantity of food by mouth to nourish her, and keep down an acidosis, he institutes proctoclysis, using 8 per cent glucose and 25 per cent sodium bicarbonate solution, also Bacon's formula 20 gm glucose, 125 gm beef peptonoids, 3 gm calcium chlorid, 4 gm sodium chlorid, 3 gm sodium bicarbonate and water to make 1,000 cc. In severe cases the duodenal tube has proved of great value, also intravenous injections of glucose should not be overlooked. Ovarian extract and corpus luteum have not helped in any of Sellers' cases.

Pennsylvania Medical Journal, Harrisburg

January 1923 26, No 4

- Relation of Mental Hospital to Community J A Jackson and H V Pike, Danville—p 209
Anthrax F B Utley Pittsburgh—p 213
Tuberculosis of Bones and Joints D P Willard Philadelphia—p 220
Syphilis of Bones and Joints B F Buzby Philadelphia—p 223
*Subjective Symptoms and Differential Leukocyte Count as Aids in Prognosis in Pernicious Anemia F A Evans Pittsburgh—p 228
*Treatment of Pernicious Anemia A H Colwell Pittsburgh—p 232
Eye Symptoms in Case of Oxycephaly, Report of Necropsy C E G Shannon Philadelphia—p 236
Cardiospasm H P Mosher Boston—p 240
Phenolphthalein Drug Eruption J V Klauder Philadelphia—p 249
*Use and Abuse of Corpus Luteum Extract in Toxic Vomiting of Early Pregnancy J S Taylor and S P Taylor Altoona—p 252
*Aneurism of Iliac Artery F T Billings, Pittsburgh—p 256
Important Points in Surgical Treatment of Toxic Goiter J Alexander, Pittsburgh—p 256

Symptoms and Leukocyte Count as Aids in Prognosis in Pernicious Anemia—Evans claims to be able to predict, in a large percentage of cases of pernicious anemia, an oncoming remission several days before it became apparent in the erythropoietic system. Improvement in the level of anti-hemolytic power of the serum in pernicious anemia precedes an oncoming remission by several days. Such elevation of the anti-hemolytic power of the serum becomes manifest very early by improvement in the subjective symptoms of the patient and frequently by an increase in the absolute number of polymorphonuclear leukocytes counted. These features, therefore, help one to predict an oncoming remission, and for this reason are an aid to judgment in deciding for or against a proposed blood transfusion.

Treatment of Pernicious Anemia—Colwell is of the opinion that transfusion of human blood in the treatment of pernicious anemia is useful in stimulating remissions, and that small doses frequently repeated are of as great value as larger ones and less dangerous.

Corpus Luteum Extract in Toxic Vomiting of Early Pregnancy—The Taylors report two abortions which followed the administration of corpus luteum extract intravenously. They favor the intramuscular route. The dosage must be determined for each patient, the dosages recommended are regarded as being too high. Small dosages frequently repeated, and by intramuscular injection, is said to be the logical method to employ. Corpus luteum extract should be used in those cases of vomiting of early pregnancy which are of toxic type.

Ruptured Aneurysm of Iliac Artery—Billings case was one of rupture of an aneurysm of the left common iliac artery with a moderate dilatation of the right. The walls of the artery showed undoubted syphilitic infiltration.

Philippine Journal of Science, Manila

December 1922 21 No 6

Additions to Knowledge of Bornean Flora E D Merrill Manila—p 515

*Schistosomiasis in Philippine Islands M P Mendoza Guazon—p 535
Coleoptera Fauna of Philippines Von W Schultze Manila—p 569

Schistosomiasis in Philippines—Ten cases of infection with *Schistosoma japonicum* are reported by Mendoza-Guazon. None of these cases was diagnosed antemortem partly due to the general belief that schistosomiasis is absent from the islands and partly because of the clinical symptoms which in a subtropical country can be interpreted as those of malaria, typhoid dysentery, portal cirrhosis, etc. Another cause is the difficulty of finding the ova in the stools and when found of recognizing them. Mendoza-Guazon regards a survey of the existing degree of infection in Manila and in Samar, as well as of the presence of its intermediary host as being advisable in order to facilitate the enforcement of preventive measures.

Public Health Journal, Toronto

January 1923 14 No 1

Vice and Drugs in Montreal A K Haywood—p 1

Prevention of Tuberculosis in School Age J H Holbrook—p 19

Sewage Treatment for Isolated Houses and Small Institutions Where Municipal Sewage is Not Available B E Parry—p 27

Southwestern Medicine, Phoenix, Ariz

January 1923 7, No 1

State Medicine M K Wylder Albuquerque N M—p 1

Treatment of Vincent's Angina with Sodium Perborate W W Waite El Paso, Tex—p 4

Compound Fractures of Extremities R L Ramey El Paso—p 6

Metamorphosis of Pathologic Conditions of Abdomen E C Prentiss El Paso—p 8

Glycosuric Nephritis A Clinical Entity? C S Vivian Phoenix—p 12

Surgery, Gynecology and Obstetrics, Chicago

January 1923 36 No 1

Rhinoplasty and Cheek Chin and Lip Plastics with Tubed Temporal Pedicled Forehead Flaps C A McWilliams and H S Dunning New York—p 1

*Parathyroid Hyperplasia and Bone Destruction in Generalized Carcinomatosis P Klemperer Chicago—p 11

*Unilateral Diuresis A Fullerton Belfast Ireland—p 16

Regeneration of Resected Urinary Bladders in Rabbit H Schuller Chicago—p 24

Diverticula of Bladder in Children A Hyman New York—p 27
Bladder Neck Obstructions Their Surgical Relief in Reference to Young Lunch W I Parker Los Angeles—p 36

Clinical Investigation of Vulvovaginitis I F Stein Chicago—p 43

*Metabolism Readings in Eighty Four Pregnant Cases E L Cornell Chicago—p 53

Recurrence of Benign Prostate W A Bryan Nashville Tenn—p 9

Necessity for Caution in Employment of High Voltage Roentgen Rays as Therapeutic Agent Against Malignant Disease Acute Suprarenal Insufficiency and Death as Sequels F Smith Chicago—p 61

*Radium Treatment of Keloids E M Daland Boston—p 63

*Blood Supply of Thyroid Its Surgical Significance F A Mastin Rochester Minn—p 69

Histologic Study of Effect of Ligation of Thyroid Vessels in Euthyroidal Goiter A S Giordano and Harold D Caylor Rochester Minn—p 75

Hemorrhage Following Abdominal Operations With Special Reference to Appendectomy and Excluding Bleeding from Stump C H Lisher Chicago—p 80

*Distribution of Acid Cells Along Dorsal Curvature of Stomach and Possible Relation to Occurrence of Gastric Ulcer H F Katcher Philadelphia—p 87

Tetanus Report of One Hundred Sixteen Cases R H Miller Boston—p 90

*Bone Grafting W R Adam Savannah Ga—p 97

*Dwyer Castro Enterotomy I C O Day Honolulu—p 99

Prostatic Problem D W Mackenzie and M I Seng Montreal—p 102

No Hand Touch Technique A R Grant Luca N Y—p 106

Instauratory Extract in Third Stage of Labor S Seide New York—p 108

Parathyroid Hyperplasia and Bone Destruction in Generalized Carcinomatosis—In Klemperer's case removal of both mammary glands for cancer was followed six months later by pains in the back. On physical examination she com-

in the metabolic rate above normal in pregnant women. It has a wide variation, however. There is nothing approaching a constant. The test is subject to many errors beyond the control of the technician. The mental attitude of pregnant women is not stable, therefore the readings are not always reliable. The results in toxic cases were so variable that no reliable information was obtained. The death of the fetus cannot be predicted from the metabolic rate.

Radium Treatment of Keloids.—In every case treated by Daland with radium benefit accrued. Twenty-six patients have had a complete destruction of their lesions. The first evidence of relief was the development of a certain amount of anesthesia in the lesion. Later, there was a disappearance of the itching and pulling sensation. Finally, there was a softening of the scar. There was less variation from the normal color of the skin in the cases treated with absorption doses. In a few of the cases treated with ulcerating doses, telangiectasis followed, but this was by no means always true. There was no evidence to show that the tendency of a given individual to develop these lesions was influenced by the treatment of any one lesion by radium.

Blood Supply of Thyroid. Its Surgical Significance.—Mastin shows that the thyroid has a very rich arterial and venous blood supply. There is an extensive anastomosis not only between vessels of the same lobe, but also with those of the opposite lobe. In the event of ligation of all four thyroid vessels, the circulation can be reestablished through extraglandular anastomosis. The secretory activity of the thyroid gland is under nerve control. After ligation of the superior thyroid artery, a polar ligation should be made in order to cut off the veins, lymphatics and remaining nerve filaments. Control of hemorrhage is best accomplished by interrupted mattress sutures placed through the remaining gland tissue, by ligation of all bleeding points, and by the use of gauze packing in the wound if necessary. Bleeding veins can often be demonstrated by having the patient strain or cough before the wound is closed.

Effect of Ligation of Thyroid Vessels in Exophthalmic Goiter.—A study was made by Giordano and Caylor of the histology of the thyroid gland for the purpose of determining if possible whether any consistent involution changes could be demonstrated following ligation and, if such changes were found, whether or not they could be correlated with the clinical course of the case between the date of ligation and the thyroidectomy. Of the fifty cases of ligated hypertrophic parenchymatous thyroid studied in detail definite involution changes were found in thirty-three (70 per cent), while sufficient distinguishing contrast between the ligated and unligated poles could not be demonstrated in the remaining fifteen. In general, this study shows that distinct clinical improvement and lowering of the basal metabolic rate occurred more often in those cases in which definite involution changes in the ligated pole could be demonstrated histologically. On the other hand, a few definite exceptions demonstrated that a correlation between the clinical findings and the presence or absence of involution changes is not to be expected in all cases.

Relation of Acid Cells in Stomach to Ulcer.—Although there seems to be some relation between the occurrence of gastric ulcers in the different regions of the stomach and the distribution of the acid cells, Radasch says that the evidence is too little to be conclusive.

Bone Grafting.—Adams takes the graft which is to be implanted intramedullarily from the fractured bone, either above or below the line of fracture, depending on which would be the more practical, considering the location of the fracture, muscles, blood vessels and nerves. The graft should be about 4 or 5 inches long and should not extend closer than within 2 inches of the fracture. The graft is cut with the twin saw. The ends, one of which is blunt the other pointed are cut with a single saw. The graft includes the periosteum and endosteum. The pointed end is inserted into the opening from which the graft has been cut, is pushed into and down the medullary canal past the line of fracture into the medullary canal of the other end of the fractured bone so that 2 or 3 inches lies in the proximal and a similar

length in the distal part of the fractured bone thus bridging the fracture. As the graft is the exact width of the medullary canal, it fits snugly and holds the fractured bones firmly and in good position.

Damper Gastro-Enterostomy.—In O'Day's operation three lines of suture are made—the second line being seromuscular. After the stomach and jejunal walls are divided on either side of this line, respectively, there is left a sort of damper or "flapper" valve. O'Day claims for his method that it will entirely do away with all the menacing postoperative features of the earlier operation: retarded hemorrhage, ulceration of that portion of the stomach wall pressed by the blades of the clamps, regurgitation of bowel contents, and ulceration of the jejunal wall where it is forcibly struck by the chyme.

Virginia Medical Monthly, Richmond

January, 1923 49, No 10

- Tocal Infection in Chronic and Recurring Disease C H Mayo Rochester Minn.—p 557
- *Tuberculosis Problem and Negro H R M Landis Philadelphia—p 561
- *Tuberculosis in Rural Virginia H R Edwards Richmond—p 566
- Is Progress Being Made in Surgical Treatment of Acute Abdominal Conditions? A M Willis, Richmond—p 573
- Forces Which Prevent Modern Medicine from Being a Success A A Houser Richmond—p 578
- Regional Anesthesia S Leigh and J H Culpepper Norfolk—p 581
- Case of Abscess of Lower Right Lobe of Lung Treated by Artificial Pneumothorax C L Harrell Norfolk—p 583
- Where Can We Find Cases of Incipient Tuberculosis? C R Grandy Norfolk—p 586
- Therapeutic Use of Bacillus Acidophilus Milk in Richmond G T Reddish and E C L Miller Richmond—p 590
- Treatment of Eclampsia J L Early Saltville—p 593
- Relation of Medical Examiner to Life Insurance Company J H Dunkley Roanoke—p 599
- Prevalence of Unsuspected Chronic Maxillary Sinus Infection E T Gatewood Richmond—p 601

Tuberculosis in Negro.—Tuberculosis in the negro, Landis says, is an interesting chapter in the etiology of this disease. He here relates the experience gained by the Phipps Institute in its fight against tuberculosis among negroes. A special clinic is in charge of a capable colored physician, who has colored nurses to help him. At present a force of six nurses and three physicians is working among the colored population. In addition, the Jefferson Hospital for Diseases of the Chest has one colored physician and one nurse. In addition to its specific problem of dealing with tuberculosis, the Phipps Institute conducts a prenatal and postnatal clinic and a syphilis clinic. Each member of the graduating class of the Mercy Hospital (a negro institution) serves for a period of two months. While the time is short it gives these nurses some idea of the tuberculosis and public health problems. The first nurse taking this course was sent to Wilmington Del. to take charge of a negro tuberculosis dispensary which had been a failure. As a result of her energy the attendance at this dispensary was tripled in two months and the dispensary days increased from one to three. Taking all these experiences into consideration this deduction would seem warranted. That those institutions that make use of negro doctors and nurses for the care of patients of the same race are from the standpoint of number of patients and regularity of their attendance, most successful in the treatment of negro patients.

Standardized Method of Diagnosis in Tuberculosis.—Edwards suggests the need of some standardized method of diagnosis. It is now sometimes difficult to understand exactly what is meant by certain tuberculosis diagnosis. If a set standard could be adopted, all cases could be classified in accordance.

West Virginia Medical Journal, Huntington

January 1923 17 No 7

- General Practitioner's Compensation O S Hare Bluefield—p 241
- Profiteers C H Maxwell Morgantown—p 249
- Diagnosis and Treatment of Carcinoma of Cervix W Neill Jr Baltimore—p 253
- Doctor and Public Health Service in Their Relations to the Public N R Price Marlinton—p 263
- Prognostic Value of Blood Chemistry in Surgery J C Bauer and R W Stoneburner Montgomery—p 263
- Modern Conception of Amputation R K Buford Charleston—p 270
- Management of Hypertension W B Porter Roanoke—p 273

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

December 1922 27 No 269

Employment of Electrical Methods in Diagnosis and Prognosis of Paralysis Due to Lesions of Peripheral Nerves G Bourguignon — p 193

Manual Treatment of Backache and Referred Pain Wetterwald — p 212

British Medical Journal, London

Jan 13 1923 1 No 3237

*Clinical Manifestations of Tabes Dorsalis G Holmes — p 47

*Applications of Physiology to Medicine I Sensory Phenomena Associated with Defective Blood Supply to Working Muscles J A MacWilliam and W J Webster — p 51

Clinical Pathologic and Radiologic Aspects of Infection of Teeth and Gums W Wilcox — p 53

Value of Butyn as Local Anesthetic W M Beaumont — p 57

Standards of Vision for Scholars and Teachers in Council Schools N B Harman — p 58

*Effect of Anesthetics on Lungs R J S McDowall — p 61

Intestinal Obstruction Following Acute Appendicitis and Peritonitis P F McFarlan — p 61

Diagnosis of Tabes Dorsalis—The diminution, loss, or alteration of sensibility to pinprick in the distal portions of the lower limbs the thoracic zone the radial borders of the arms and the central portion of the face Holmes points out constitutes the most common the most definite and the most characteristic physical sign of tabes dorsalis. It is frequently present when the knee-jerks and the pupillary reactions are normal and before ataxia or other symptoms develop and it is consequently a most important phenomenon in the diagnosis of the disease. The loss of sensation in these areas is a dissociated one—that is, its different modalities are affected in different degrees, or some forms only may be disturbed. Touch, for instance is frequently intact on the chest and face at least, and the affection of thermal sensibility is inconstant and irregular. Its diagnostic value is enhanced by the fact that in no other disease is there dissociated analgesia of a similar distribution.

Sensory Phenomena Associated with Defective Blood Supply to Working Muscles—MacWilliam and Webster investigated the behavior of human muscles temporarily deprived of their blood supply while innervation remained intact. The sensory phenomena recognizable in the states of rest and activity were examined and brought into relation with other functional conditions such as changes in contractile power etc. It was found that simple deprivation of blood in the ischemic limb for periods up to twenty minutes caused no great sensory effects, only coldness in the bloodless part, with an inclination to shift the position of the limb and a certain amount of discomfort from the continued constriction by the obliterating armlet, the absence of pain is to be noted. Muscular action in the ischemic limb soon becomes painful and when carried to the point of 'fatigue' is acutely painful. The pain arises from exercise of a comparatively small amount of muscular tissue—in the presence of an acute lack of blood supply, involving urgent want of oxygen (anoxemia) and its consequences, with excessive accumulation of metabolic products acids and other bodies. The authors are convinced that the pain is protective in character tending to limitation of effort and shielding the muscle from being spurred on to further and injurious activity. These observations have a close bearing on the problems associated with the pain of angina pectoris and the experiments also have an obvious application to the phenomena of the condition called intermittent claudication, as seen in the legs of men and horses in which muscular exertion is interrupted by attacks of pain loss of power coldness of the limbs, etc.

Effect of Anesthetics on the Lungs—Recovery from the pulmonary effects occurs after ether McDowall says but after deep and prolonged anesthesia with chloroform recovery is the exception. The actual death of tissue in the lungs as a result of the anesthetic does not appear to be a remote possibility that the absorption of toxic products from such dead tissue should produce delayed chloroform poisoning seems most reasonable. Another function abolished is that

of the bronchioles which limit the amount of air passing into the alveoli. McDowall has demonstrated that the action of epinephrin on the bronchioles may similarly be prevented by deep anesthesia. The evidence indicates that deep or prolonged anesthesia with ether, and especially with chloroform should be avoided whenever possible. It is suggested that narcotics should be more extensively used to supplement volatile anesthetics.

Irish Journal of Medical Science, Dublin

December 1922 5, No 10

What Makes for Success in Surgical Treatment. W I de C. Wheeler — p 437

Enteric Salmonella Bacilli W D O Kelly — p 452

Old Ether Colonic Anesthesia by Control Method. A E Boyd — p 472

Japan Medical World, Tokyo

December 1922 2 No 12

*Experimental Results of Artificial Production of Mammary Carcinoma in Last Five Years K Yamagawa and K Murayama — p 37

*Amounts of Enzymes in Duodenal Fluid in Exophthalmic Goiter K Gyotoku — p 339

*Influence of Korean Ginseng on Metabolism S Inada and J Takamizu — p 343

Pelution of Immunity and Bactericidal fast Bacillus Mallei H Toyota and D Kaku — p 345

Artificial Production of Breast Cancer—During the last five years Yamagawa and Murayama inoculated pure tar tar extract tar extract lanolin tar lanolin liquid paraffin or tar olive oil but mainly tar or tar lanolin into the mammary regions of 188 female rabbits in doses from 0.3 to 1 cc once or twice a month. In twenty-three rabbits or 12.23 per cent carcinoma developed.

Enzymes in Duodenal Fluid in Cases of Exophthalmic Goiter—A quantitative determination was made by Gyotoku of the enzymes contained in the duodenal fluid in twenty cases of exophthalmic goiter. In 60 per cent of the cases these enzymes were diminished in amount. These patients also had marked digestive disturbances. There was no relation between the amount of enzymes in the duodenal fluid and the degree of disturbances of carbohydrate metabolism.

Influence of Ginseng on Metabolism—Inada and Takamizu assert that when ginseng is taken in large amount there is a slight increase of splitting of body protein but not enough to reduce the body weight. As the result of temporary stimulation the urine output is increased, but it soon decreases markedly, and returns to normal after a while. Although ginseng decreases the urine output it has no influence on the constituents of the urine.

Lancet, London

Jan 6 1923 1 No 1

Modern Methods of Diagnosis and Treatment of Syphilis of Nervous System F W Mott — p 1

Treatment of Syphilis Especially Its Later Manifestations. L. W. Harrison — p 4

*Tuberculous Affections of Tongue R M Handfield Jones — p 8

*Forms of Tuberculous Arthritis and Their Treatment E Ward — p 11

Thoracic Surgery War Lessons in Civil Practice R P Rowland — p 16

*Identity of Toxins Produced by Serologically Different Strains of Diphtheria Bacillus P Hartley — p 17

*Wagner's New Treatment of General Paralysis A Pilez — p 19

*Bacteriology of Ozena K Sakagami — p 19

Case of Primary Carcinoma of Lung H J C Gibson and C M Findlay — p 21

*Diabetes Mellitus in an Infant Aged Five Months H T Ashby — p 22

Endothelioma of Male Breast Following an Injury H K Griffith — p 22

Barium in Harrogate Waters A Woodmansey — p 22

Two Cases of Congenital Hemihypertrophy D Paterson — p 23

Tuberculosis of Tongue—Five cases of lingual tuberculosis are reported by Jones. An inquiry made of ten general hospitals and ten sanatoriums revealed only twelve cases. The author's patients ranged in age from 28 to 59 years. Three were males. Pulmonary tuberculosis was present in all of them. In one case a diagnosis of cancer was made. Microscopic examination of the tissue removed confirmed the diagnosis of tuberculosis in each case.

Tuberculous Arthritis—A new classification of tuberculous joints is suggested by Ward (1).

culous arthritis (a) major and (b) minor arthritis, (2) polyarticular tuberculous arthritis (a) suppurative, (b) rheumatoid, (c) osteoarthritic, and (d) arthritis deformans, (3) tuberculous rheumatism, (4) aberrant forms of tuberculous arthritis. A minor tuberculous arthritis is described. Relative, rather than absolute, immobilization for tuberculous joints is advised. Short cuts in the treatment of tuberculous arthritis are discussed.

Efficacy of Monovalent Diphtheria Antitoxin—Fifteen strains of the diphtheria bacillus were investigated by Hartley. The results obtained are in agreement with those obtained by Paxson, Redowitz, Park Williams and Mann. Further, these results obtained experimentally in the laboratory are in accord with the vast amount of clinical evidence concerning the efficacy of monovalent diphtheria antitoxin which has been accumulated during the last twenty-five years all over the world. Hartley says it is reasonable to suppose that if different strains of diphtheria bacilli produced toxins which exhibited wide differences in their affinity for antitoxin, evidence—or at least indications—of this would have been forthcoming from workers studying diphtheria from the clinical side. As Park, Williams and Mann have pointed out, ever since diphtheria antitoxin has been used in practice hundreds of thousands of persons known to be contacts have been given practically complete protection for two weeks by the injection of monovalent antitoxin, and, further, routine virulence tests throughout the world have shown that a monovalent antitoxin protects animals against a dose of living culture fatal to animals not given antitoxin.

Wagner's Treatment of General Paralysis—The von Wagner treatment consists in the subcutaneous injection of the blood of an untreated malaria patient into a general paralytic. Pilcz reports his experiences with this method of treatment in 141 cases. Fifty-one patients have completely recovered, eighteen show marked and persisting remission without being able, however, to return to their former occupations. Fifty-seven cases became stationary or showed an incomplete remission. Fifteen patients died. Pilcz points out that there is no parallelism in the degree and duration of the remissions, on the one hand, and in the serologic reactions (lumbar fluid etc.) on the other. The best results are obtained in cases with maniacal symptoms and in cases of simple demency, the hypochondriacal, presenile and catatonic forms of disease show a less favorable prognosis. Generally remission does not immediately follow treatment, it develops gradually, finally becoming permanent. This method is employed not only in cases of general paralysis, but also in tabes and other forms of neurosyphilis. In disseminated sclerosis also good results have been obtained.

Bacteriology of Ozena—The results of Sakagani's experiments, briefly, were. The so-called ozena bacillus, obtained from the nasal passages of ozena patients, agrees in all important points with the coccobacillus of Perez. The coccobacillus is to be found only in ozena patients, and not in persons suffering from other nasal diseases nor in healthy persons. By experimental infection of the nasal passages of rabbits Sakagani was able to produce symptoms closely agreeing with those of human ozena. In the various immune tests with this coccobacillus the serum of ozena patients generally showed a weak reaction, with some patients, however (i.e. those tending toward recovery) the specific reactions were remarkably strong. It could be demonstrated that the serum from a rabbit immunized against this coccobacillus produces various immune bodies with great intensity. In animal experiments with this bacillus the presence of immune bodies in the serum was clearly demonstrable, on the other hand the reactions of the serum of most patients were rather weak. This can be explained from the nature of the disease which causes merely local changes, so that in the general circulation the antibodies appear only in small quantities. From these experiments Sakagani is convinced that his coccobacillus may be considered to be the causative agent of ozena.

Primary Carcinoma of Lung—The primary lung tumor in the case reported by Gibson and Findlay was composed of cylindrical columnar cells arranged for the most part in papillary-like tufts. Much of the tumor had undergone a myxomatous type of degeneration. No evidence of a tuber-

culous process could be detected in either lung. A columnar type of cell was found in a pancreatic metastasis. In the suprarenals, however, the cells showed more irregularity in their shape, some were columnar, others were definitely polyhedral, while the general arrangement was more diffuse. In the secondary growths present in the skin and muscles a definite squamous cell metaplasia had taken place, all transitional types of cell were noted, from columnar epithelium to squamous epithelium, the latter, arranged in cell masses, resembling those found in a typical squamous epithelioma. There was no actual formation of keratin by these squamous cells.

Diabetes Mellitus in Infant Aged Five Months—Ashby's patient was admitted to the hospital with the diagnosis of pyelitis. She had a dry, scaly skin, which seemed to irritate. The urine (catheter specimen) was acid and cloudy, and contained a small quantity of albumin. Microscopically pus cells and *B. coli* in large numbers were seen. During the first three weeks in the hospital the baby gradually lost weight, had frequent loose stools, had a continuous rise of temperature, and was always restless. The urine became much clearer and less acid, though the temperature became higher. At the end of the third week, the second toe of the left foot became black and gangrenous. The urine was positive for sugar. There was never enough urine to estimate with accuracy the amount of sugar or the specific gravity. Two days later, the second toe of the opposite foot started in the same way. A fortnight later both toes came off and the surrounding skin became healthier. The loss of weight was slow but gradual. The baby died six weeks after admission.

Endothelioma of Male Breast Following Injury—In April, Griffith's patient, a man, aged 50, received a blow from a horse's bit just above the right nipple. At the end of May the condition had cleared up, except for a definite cystic tumor, which was freely movable in the surrounding tissues and not attached to the skin. In July, conditions were such that operation was advised. The breast was removed. The tumor (macroscopically) was encapsuled, and did not infiltrate the breast tissue or the skin, which was much stretched over it at one point. The sections showed a degenerating endothelioma. It seems probable to Griffith that the injury led to the formation of a hematoma, and the irritation caused by the presence of this blood clot gave rise to so much endothelial proliferation that an actual tumor, an endothelioma, arose in that situation.

Sei-I-Kwai Medical Journal, Tokyo, Japan

December 1922 41 No 6

*Influence of Some Antiseptics and Narcotics on Movement of Spermatozoa. Y. Ishikawa—p. 1

*Experiments in Deep Breathing on Animals for Its Prophylactic Effects on Pulmonary Tuberculosis. S. Otabe—p. 21

*Tubercle Bacilli in Blood Stream of Tuberculous Animals. S. Otabe—p. 32

Influence of Antiseptics and Narcotics on Movement of Spermatozoa—This paper is concerned with the influences of some antiseptics and narcotics, in dilute solution, on the movement of spermatozoa outside the body. The chief purpose of Ishikawa's investigation was aimed at the theoretical basis of the modern methods of preventing conception.

Prophylactic Effect of Deep Breathing on Pulmonary Tuberculosis—Otabe's experiments confirm the theory that deep breathing has a retarding influence on the tuberculous process. The process in the lungs of animals to which deep breathing was applied was less developed than in the controlled animals.

Tubercle Bacilli in Blood Stream—Otabe's investigation was negative. He used water freshly distilled every day. Although clinically the experiment animals gave every evidence of tuberculosis he never found tubercle bacilli in the blood microscopically, nor was he able to obtain a culture from the blood.

Bulletin de l'Académie de Médecine, Paris

Dec. 26 1922 88, No 43 The Pauteur Centennial

*President's Address. A. Bebal—p. 621

*Pasteur and General Biology. Delezenne—p. 636

- *Pasteur's Work and Medicine F. Vidal—p. 646
- *Pasteur's Work and Surgery P. Delbet—p. 658
- *Pasteur's Work and Obstetrics V. Wallich—p. 673
- *Pasteur's Work and Veterinary Medicine Barrier—p. 679
- *Pasteur's Work and the Progress of Hygiene A. Calmette—p. 684

Pasteur's Centenary—The addresses published in this number were delivered at the Pasteur centennial celebration at the Académie de Médecine and were reviewed in the Paris Letter, January 27, p. 265

Bulletin Medical, Paris

Dec 9 1922 36 No 50

- *The Liver in Children P. Lereboullet—p. 1009
- Surgical Treatment of Adenocarcinoma of Breast T. Asteriades—p. 1015

The Liver in Children—Lereboullet surveys the symptomatology and pathology of the liver in children. The liver is relatively larger than in adults and palpation is of great importance. In testing for alimentary glycosuria, comparatively large amounts of glucose should be used, for instance 80 gm for a child of 20 kg. The test is frequently positive in rachitis, scarlet fever, diphtheria and gastroenteritis.

Dec 16 1922 36 No 51

- Biologic Treatment of Gonorrhea A. Grimberg and M. Uzan—p. 1035

Biologic Treatment of Gonorrhea—Grimberg and Uzan review the nonspecific biologic treatment of gonorrhea. They point out that antimeningococcus serum is not effective against variant types of meningococcus. Antigenococcus serum and vaccines may have only a slightly greater value than nonspecific preparations, but the specific action is an advantage. The doses of the specific vaccine have to be very large.

Bulletins de la Société Médicale des Hôpitaux, Paris

Dec 8 1922 46 No 35

- *Bronze Skin Not Due to Addison's Disease A. Sezary and J. Levesque—p. 1644
- *Lineal Striae After Right Pneumothorax E. Rist and P. Jacob—p. 1646
- *Purulent Gonorrheal Arthritis B. Weill-Halle and Turpin—p. 1649
- *Cardiac Infantilism C. Oddo and E. Girbal—p. 1652
- *Chronic Lymphoid Leukemia J. Tépice—p. 1656
- *Hereditary and Familial Exostoses E. Lenoble and Y. Jegat—p. 1661
- *Induced Pneumothorax with Normal Pregnancy A. Gendron—p. 1669
- *Localized Tetanus of Right Leg A. Berge and R. Azoulay—p. 1674

Bronze-Skin Not Due to Addison's Disease—Sezary and Levesque present the clinical history and histologic findings of a tuberculous woman who had all the symptoms of Addison's disease except increased fatigability and low blood pressure. Necropsy confirmed the clinical supposition of normal suprarenal capsules.

Parallel Striae After Right Pneumothorax—Rist and Jacob present the case of a young girl with many parallel striae on the side opposite to an artificial pneumothorax. The side with the striae was 6 cm broader than the side with the pneumothorax. Abnormal fragility of the skin is the probable cause.

Purulent Gonorrheal Arthritis Cured by Serotherapy—Weill-Halle and Turpin present a case of purulent gonorrheal arthritis with recovery after intra-articular serotherapy. Intravenous injections of calcium chlorid influenced favorably the serum disease.

Cardiac Infantilism—Oddo and Girbal report a case which they call cardiac infantilism because they attribute the lack of genital development in the 16 years old girl to a mitral stenosis acquired in early childhood.

Chronic Lymphoid Leukemia—The patient died of lobar pneumonia. The alveolar exudate consisted of polymorphonuclears, while the capillaries were filled with lymphocytes.

Hereditary and Familial Osteogenous Exostoses—Lenoble and Jegat suggest that tuberculous infection may influence the whole body in a way similar to syphilis and cause endocrine disturbances entailing malformations in the offspring.

Induced Bilateral Pneumothorax with Normal Intercurrent Pregnancy—Gendron performed a left pneumothorax on his patient in 1919. In 1921 the woman became pregnant and tuberculosis developed in the right lung. He allowed the resorption of the left pneumothorax and instituted another

on the right side which he has continued with good success for ten months to date.

Hyperchronic Tetanus Localized in Leg—Berge and Azoulay's patient had been wounded in his right knee by fragments of a shell in 1915. Contracture developed in this leg, with a perforating ulcer, two years later. The contractions varied in strength and extent and to relieve the causalgia sympathectomy was done but without benefit. The tetanus in the limb became more pronounced and in 1922 extended to the whole body, except the face, and proved speedily fatal rebellious to antitetanus treatment.

Dec 15 1922 46 No 36

- *Diagnosis of Addison's Disease E. Sergent—p. 1679
- *Treatment of Bronchiectasis L. Ribadeau-Dumas and Meequot—p. 1688
- *Arthrotypoid H. Bourge—p. 1691
- Mixed Epidemic Encephalitis H. Bourges and M. Breuil—p. 1696
- *Diastolic Murmur in Hypertension A. Berge and G. Brich—p. 1700
- Unilateral Pulmonary Tuberculosis with Cavity Improved by Artificial Pneumothorax G. Cussade and Derville—p. 1706
- *Duodenal Intubation in Jaundice E. Chabrol et al—p. 1710
- Hydrocephalus with Obesity Bonnet et al—p. 1723
- Gonococcus Abscess of Wrist and Hand Klippel and Rachet—p. 1731

Diagnosis of Addison's Disease—Contrary to Sezary, Sergent contends that it is possible to make a safe clinical diagnosis of Addison's disease even in the absence of some signs and gives a new example. He believes that extremes in critical analysis are just as dangerous as abuses of generalization.

Surgical Treatment of Bronchiectasis—The woman, aged 35, had suffered for twenty years from bronchiectasis which showed at last signs of a cavity, hemoptysis and purulent sputum. Pneumonotomy performed after delivery of a child was followed by almost complete success.

Arthrotypoid—Bourges publishes three cases of typhoid affecting joints in its acute stage.

Diastolic Murmur in Nephritis Hypertension—Berge and Basch attribute the diastolic murmur in their case of nephritic hypertension to two small congenital openings in the aortic valves. In the discussion of the case Luby expressed the opinion that the diastolic murmurs in similar cases of hypertension are due to dislocation of the valve opening by dilatation of the ventricle. They may be present even with healthy valves.

Duodenal Intubation in Jaundice and Cirrhosis of the Liver—Chabrol, Benard and Gambillard studied the secretion of bile in forty patients with affections of the liver. In some cases the examination was repeated several times. The most interesting result was the observation that in atrophic cirrhosis of the liver there need not be diminution of the biliary pigments nor of the salts. Obstruction in catarrhal jaundice is rarely absolute. This is sufficiently constant to explain the direct origin of stercobilin in the stools. They doubt the theory of dissociated icterus. In every jaundice the amount of salts is comparatively lower than that of bilirubin. This is due sometimes to exaggerated hemolysis. In other cases it seems that Schiff's law (circulation of biliary acids from the liver to the intestine and back), explains the loss of acids and their lack in the bile when the circle is interrupted.

Journal de Médecine de Bordeaux

Nov 10 1922 94 No 21

- Epidermomycozes G. Petges—p. 695
- Therapeutic Value of Physical Culture P. Cadeneule—p. 709

Physical Culture in Affections of Children—Cadeneule had excellent results with systematic gymnastics in children suffering from adenoids, tuberculous habitus, neuritis or some other pathologic conditions. He emphasizes the beneficial effects on the development of body and mind and especially on the normal sexual development of girl.

Journal de Médecine de Lyon

Dec 20 1922 77 No 71

- Various Outlets of Human Intestine J. Guérin—p. 747
- Human Parasitology in Roumania A. Leca—p. 751
- Brachypulmonary Spirochetosis C. Garnier—p. 755
- Tuberculosis C. Garnier and B. Jadoux—p. 759

Spirochaeta Dentium in Gingivitis—Missia and Grigorakis—p. 769
Anaphylaxis in Intestinal Helminthiasis—L. Morenas—p. 773

Survival and Cinematography of Ascaris Outside of the Human Intestine—Guart was able to keep ascarids, from the human intestine, living for several days. The animal keeps well in normal salt solution which has to be changed twice daily. It is fed by an addition of human blood to the solution. After feeding, a change of the medium is necessary.

Human Parasitology in Roumania—Leon reviews the human parasites in Roumania, and publishes a case of myiasis of the male urogenital tract.

Clinical Forms of Bronchopulmonary Spirochetosis—Garin and Morenas draw attention to this affection because it has occurred in several epidemics since the war in Europe. Castellani's spirochetes are present in the sputum, other spirochetes and fusiform bacilli seem to be without importance. The typical form of the disease may be acute, with moderate fever for two to six days. The sputum is mucous and mucopurulent. If the bronchitis continues, the expectoration becomes bloody. In other cases the affection starts mildly and the first symptom is this red jelly-like sputum. Atypical cases may resemble ordinary bronchitis, pneumonia and bronchopneumonia. The diagnosis between tuberculosis and spirochetosis can be made only by examination of the sputum. Both diseases may be present at the same time. Iodids are useful in the treatment of this affection.

Tick Paralysis—Garin and Bujadoux publish the first case observed in France.

Anaphylaxis in Intestinal Helminthiasis—Morenas considers eosinophilia and Charcot-Leyden crystals in the feces of patients as the strongest indication of anaphylactic reactions.

Journal de Radiologie, Paris

November 1922 6 No. 11

Goetsch Test and Radiotherapy in Thyroid Disease—Tarnauceanu—p. 501

Two Intensifying Screens in Radiography—M. de Laroquette—p. 511

The Goetsch Test and Radiography of the Thyroid—Tarnauceanu extols the value of the Goetsch test in hyperthyroidism. He used 1 cc instead of 0.5 cc of the 1:1000 epinephrin solution. In conclusion he states that on account of the remarkable results this test should be adopted as a routine practice in radiology to sift out the cases suitable for radiotherapy.

Journal d'Urologie, Paris

November 1922 14, No. 5

Nephrolithotomy and Pyelolithotomy—A. Pousson—p. 353

Lithotriolapaxy—M. Pavone—p. 371

Endo-Urethral and Endovaginal Diathermy—E. Roucaurol—p. 385

Application of Radium with the C₃ telescope—L. Buerger—p. 409

Treatment of Gonorrhea—J. Janet—p. 419

Nephrolithotomy and Pyelolithotomy—Pousson finds that nephrolithotomy does not disturb the renal function more than pyelolithotomy. Therefore, in the choice between these two operations it is not necessary to consider the future of the patient which is the same in both. The indications are the site, form and size of the stone. Roentgenography is necessary but in some cases only direct examination of the kidney can decide.

Endo-Urethral and Endovaginal Diathermy—Roucaurol considers diathermy the method of choice in acute and chronic gonorrhea. It may even cure sterility from endometritis. Very few persons are intolerant.

Treatment of Gonorrhea—Janet points out the necessity to examine filaments microscopically. Their persistence may in rare cases be due to a simple urethritis caused by continued treatment of a cured gonorrhea. On the other hand, men who have a perfectly clear urine, but who have gonococci in the first small drop in the morning, require treatment.

Paris Medical

Dec. 9 1922 12 No. 49

Senile Changes in the Eye—F. Terrien—p. 517

The Wassermann Reaction with Fresh Serum—Durupt—p. 519

Anaphylaxis—W. Kopaczewski—p. 524

Senile Changes in the Eye—Terrien reviews the senile changes of eyes. Subconjunctival hemorrhages are frequent. They have no prognostic significance for hemorrhages of the brain. Miliary aneurysms in the retinal arteries are such a premonitory sign. They look like small pearls and may be mistaken for a bend in the vessel. The formation of a cataract is sometimes preceded by improvement of hypermetropia, from sclerotic changes in the lens. The turbidity under oblique illumination must not be mistaken for a beginning cataract, the lens is perfectly clear when examined with an ophthalmoscope.

The Wassermann Reaction with Fresh Serum—Durupt had 15 per cent more correct positive Wassermann reactions when using fresh serum and its complement and natural hemolysin against sheep corpuscles. The positive reaction with fresh serum is earlier, remains longer during treatment and is often the only positive reaction in hereditary syphilis. The hemolytic index of the serum (its content of complement and natural hemolysin) must be tested.

Anaphylaxis—Kopaczewski discusses the terminology and theories of proteinogenous shock.

Presse Medicale, Paris

Dec. 16 1922 30 No. 100

Diuretic Action of Mercurials—L. Blum and H. Schwab—p. 1081

Roentgen-Ray Epithelioma Cured by Diathermy—H. Bordier—p. 1083

Modern Classification of Nephritis—Wolf—p. 1084

Diuretic Action of Mercurials—Blum and Schwab investigated the diuretic properties of compounds of mercury by injecting from 4 to 5 cc of cyanid of mercury intravenously. An injection of 1 cc was used to test the sensibility to the drug. The diuretic effect was marvellous in one cardiac case in which the edema had resisted other medication. In another case the injection was fatal. Investigation of the ureosecretory coefficient showed in every case, treated with mercury, actual injury of the kidneys. As in azotemic nephritis, it affected the elimination of urea, but not of sodium chlorid. Even in healthy subjects on a salt-free diet, the injection was followed by increased elimination of chlorids. It is possible that the drug has also some action on the tissues, although its principal effect seems to be on the kidneys. Therefore this treatment is absolutely contraindicated in nephritic edema, and should be used very cautiously in other diseases, and only after every other form of treatment has failed.

Roentgen-Ray Epithelioma Cured by Diathermy—Bordier publishes another very successful case and describes his electrodes.

Modern Classification of Nephritis—Wolf concludes his report on the new German classification (Volhard and Fahr).

Progres Medical, Paris

Dec. 9 1922 37, No. 49

The Training of Midwives—C. Jeannin—p. 573

Tuberculosis and Dental Caries—Siffre—p. 580

The Training of Midwives—Jeannin's inaugural lecture deals with the training of midwives.

Tuberculosis and Dental Caries—Siffre found that teeth contain usually a little more than 66 per cent of mineral substances. Caries does not occur more frequently in teeth with a lower content. Caries has no relation to a demineralization of the teeth nor to tuberculosis. The influence of tuberculosis can be only the same as that of other nutritional disturbances. Pregnancy, infancy, and puberty are the only periods of importance for the formation of teeth.

Dec. 23 1922 37 No. 52

Malta Fever and Fixation Abscess—H. Rozicus—p. 671

Vicarious Menstruation—Dalehe—p. 672

Isolation of Vitamin A—Tetsuwo Kikawa—p. 674

Treatment of Infantile Syphilis with Arphenamin—Paul Boncourt and J. Clement—p. 675

Malta Fever and Fixation Abscess—Rozicus describes a case of Malta fever which started ten days after the patient had taken for the first time in her life raw goats milk. The usual treatment failed, but recovery followed a fixation

abscess He insists on using really old turpentine, in higher doses than are usual (2 to 3 cc) The earlier the injection is made, the better the results

Vicarious Menstruation—Dolche attributes bleeding from different organs at the time of menstruation to complex endocrine and neurotic disturbances

Isolation of Vitamin A—Kagawa reports the isolation of vitamin A by Katsuya Takahashi Ten grams of this substance were extracted from 1 kg of cod liver oil, 0.0001 gm was sufficient to cure an animal dying from deficient diet The fluid substance keeps well in alcoholic or fatty solution It contains 81 per cent carbon and 10 per cent hydrogen, and resembles cholesterol

Pediatrics, Naples

Dec 15 1922 30, No 24

- *Mixed Typhoid and Malta Fever L Auricchio—p 1155
- *Vitamins in Milk and Rachitis R Pollitzer—p 1164
- *Leishmaniasis in Messina G Castorina—p 1173

Mixed Infection with Typhoid and Malta Fever—Auricchio publishes four cases of combined Malta fever and typhoid, and one case with paratyphoid The typhoid infection dominates the picture

Experiments on the Relation of Vitamin Content of Milk to Rachitis—Pollitzer reviews the pathogenesis of rachitis, and emphasizes the secondary (or indirect) decalcifying factors These factors inhibit the action of vitamin A Since it is soluble in fat disturbances of digestion may prevent its absorption Absence of muscular activity is another such factor The importance of light is well known He fed rats on foods without vitamin A and then gave in addition milk from women whose children were healthy and others who were nursing rachitic children The addition of 5 cc of such milk every second day caused a moderate increase in weight without any difference between the two groups He does not consider these results as final The congenital reserve in vitamins seems to be an important factor in the development of rachitis

Leishmaniasis in Messina—Castorina gives a survey of forty-four cases of leishmaniasis in children living in Messina and surroundings Antimony tartrate was injected intravenously Clinical improvement began usually after the fifteenth injection

Polichinico, Rome

Dec 11 1922 29, No 50

- Radical Cure of Varicocele with Orchidopexy P Amorosi—p 1621
- *Nitritoid Crises After Arspenamin B Lo Vullo—p 1626
- Case of Malignant Neoplasm of Left Lung G Miracapillo—p 1631

Radical Cure of Varicocele with Fixation of Testicle—Amorosi describes in detail the operation devised by Paravacchia His experiments show that it is harmless as regards the nutrition and function of the testes Thus cannot be said for other methods

So-Called Nitritoid Crises from Defective Preparations of Arspenamin—Lo Vullo proves that these crises are simply due to bad preparations

Riforma Medica, Naples

Dec 11 1922 38, No 50

- Pseudotuberculosis Due to Nocardia I Iacono—p 1181
- Bilateral Mammary Carcinoma C F Birnchietti—p 1183
- Isotonic Infusions of Salt and Glucose E Zagari—p 1186
- Purulent Pericarditis P Orsini—p 1188
- Diagnosis of Gastric and Duodenal Ulcers L Torraca—p 1190

Pseudotuberculosis Due to Nocardia—Iacono describes a case of pseudotuberculosis of lungs due to the nocardia Its mycelium in the sputum is acid-fast and may be mistaken for the tubercle bacillus The site of predilection is the base of the lungs Inconstant fever mucopurulent sputum (sometimes containing blood) and chronic bronchopneumonia leading eventually to the formation of cavities, are the usual signs

Isotonic Infusion of Salt and Glucose—Zagari compared the effects of hypodermoclysis with a 47 per cent solution of glucose and a 0.75 per cent solution of sodium chloride He finds that glucose infusions have a better influence on the heart, kidneys, nerves and muscles while salt solutions

depress the output of work, the muscle tonus and reflex excitability

Anales de la Facultad de Medicina de Montevideo

September-October 1922 7, No 78

- *The Nerves in Fracture of the Wrist A Navarro—p 395
- *Postoperative Cardiac Insufficiency E Blanco Acevedo—p 399
- Surgical Treatment of Constipation A Lamas—p 402
- Shock in Gynecology and Obstetrics A Turenne—p 409
- Prophylaxis of General Paresis F S Garmendia—p 433
- Unusual Locations of Hydatid Cyst A Roldan—p 442
- The Recurring Subcutaneous Mucous Chancre J Travieso—p 449
- *Experimental Chronic Irritation C Stajano—p 467
- *Refusal to Submit to Operation D Prat—p 470
- The Planes in Anatomy of the Mediastinum J Humberto May—p 480
- Chemical Study of Tartrobismuthate of Sodium and Potassium A Bocage et al—p 483
- Syphilitic General Pustular Eruption A Bellagamba—p 501

Compression of Median Nerve in Fracture of Wrist—In one of Navarro's two cases the nervous disturbances developed slowly but were pronounced by the third month The fracture had been treated without immobilization and secondary deformity with compression of the median nerve, resulted

Acute Postoperative Cardiac Insufficiency—Blanco Acevedo warns against assuming the presence of hemorrhage when dyspnea precordial pain and other symptoms after an operation indicate acute insufficiency of the heart In two cases described digitalis by the vein promptly restored normal conditions

Experimental Chronic Irritation—Stajano says that his experiments on animals have confirmed the importance of revulsion in the treatment of trophic lesions They also sustain the theory of trophic centers

Refusal to Submit to Needed Operation—Prat discusses the equity of awarding a pension to a man aged 61, incapacitated by hemorrhoids who refused operative relief

Archivos Españoles de Pediatría, Madrid

November 1922 6, No 11

- *The Prescurvy Stage Jose Estella y B de Castro—p 641
- *Erysipelas in Two Sisters C S de los Terreros—p 655
- Pathology of the Esophagus A Hinojar—p 660

The Prescurvy Stage—In fully 50 per cent scurvy does not develop beyond the preliminary phase Even then there is evidence of dystrophy weakness and angiomalacia Edema should always suggest a possible 'prescurvy' condition The changes in the bones are too characteristic to be mistaken for any other affection except possibly Parrot's osteochondritis

Erysipelas in Two Sisters—The children went to confession together and each developed the next day a patch of erysipelas on the cheek that had rested on the woodwork of the confessional

Prensa Medica Argentina, Buenos Aires

Nov 20 1922 9, No 17

- *Effects of Irritation of Splanchnic Nerves B A Houssay—p 490
- Vaccination Against Diphtheria Bachmann and de la Barrera—p 499
- *Typhoid Bacilli Carriers M J Barilari and R O Rodriguez—p 500

Factors in Rise in Blood Pressure After Irritation of Splanchnic Nerves—Houssay reports experiments on cats and dogs which demonstrated that irritation of the splanchnic nerves increases the secretion of epinephrin The inevitable rise in blood pressure is due in part to the increase in epinephrin but mainly to neuromuscular vasoconstriction by the direct action of the irritated splanchnic nerves

Treatment of Typhoid Bacilli Carrier—There was a history of typhoid at the age of 5 and again at 25 29 30 33 and 34 The last attack began with acute gallbladder symptoms and the retrospective diagnosis was chronic typhoid infection of the gallbladder with periodic exacerbations No typhoid bacilli have been found in the stools since the gallbladder was removed The family history contains several cases of cholelithiasis which indicate an inherited predisposition and condition of the biliary apparatus

Dec 10 1922 9, No 19

- *The Spinal Fluid in Neurosyphilis C Boni—p 553
- Uda 767 and O Catalano—p 553

- *Syphilis of the Mamma M R Castex and L G Bouzat—p 558
- *Biopsy S Mazza and M Balado—p 564
- *Hemoclastic Crisis in Insufficiency of Liver A B Ribeyrolles—p 570
- Research on Chronaxia V Tedeschi—p 578
- Lumbar Puncture in Neurosyphilis J B Arizabalo—p 583

The Spinal Fluid in Neurosyphilis—The findings are tabulated with seven parallel tests of the cerebrospinal fluid in 130 cases of neurosyphilis and other affections of the central nervous system. They confirm the reliability of the Nonne phase I and the Pandy test. The Emanuel reaction is constantly positive in neurosyphilis.

Syphilis of the Mamma—Castex and Bouzat remark that a gumma in the mamma usually develops more rapidly than an adenoma. In one case, however, an adenoma grew in five days to the size of an egg. Ulceration occurs earlier with a gumma than in malignant disease, but the axillary glands are not involved so early. In a case described, there was no secretion from the fistula opening from the small tumor in the left breast, but there was bilateral hemorrhagic effusion in the pleura. Syphilis was known in the antecedents of the woman, aged 43, and under specific treatment the tumor subsided to a very small lump. In a second case the tumor had grown rapidly in seven days, but began to retrogress at the first mercurial treatment, and was soon reduced to a fifth of its former size. In both cases the tumors were adherent to the skin but not to the lower tissues. The axillary glands were enlarged in the second but not in the first case.

Diagnostic Biopsy—Mazza and Balado review the technic for obtaining scraps of tissue for microscopy, and the interpretation of the findings.

The Hemoclastic Crisis in Diagnosis of Insufficiency of the Liver—Ribeyrolles' experience has confirmed Vidal's statements as to the reliability of the leukopenia which follows drinking 200 gm of milk while fasting, as indication that the liver function is below par.

Dec 20 1922 9, No 20

- *Physiopathology of Pneumoperitoneum P Alessandrini—p 589
- Efficacy of Arsenical Treatment by the Mouth in Intestinal Flagellosis S Mazza and E V Merlo—p 591
- *Infantilism of Renal Origin M Acuña and J P Garrahan—p 594
- Recurring Inguinal Hernia M Balado—p 604
- Pupil Membrane Simulating Aplasia of Iris E Adrogo—p 610
- Practical Psychometer A Mo and J L Alberti—p 612
- Operative Correction of Ankylosis of Knee A Ceballos—p 616

Pneumoperitoneum—Alessandrini has been studying the physiopathology of artificial pneumoperitoneum in 200 cases. It is a harmless procedure which throws light on the physiology of the abdomen.

Infantilism of Renal Origin—Pure uremic nephritis was accompanied by stunting of growth. On suspicion of inherited syphilis mercurial treatment was given but it aggravated conditions. The boy died at the age of 16. In a second case the boy seemed about 6 years old although really 9. Some improvement was realized under heliotherapy and dieting, but the urea in the blood kept high.

Revista de la Asoc Medica Argentina, Buenos Aires

October 1922 35 No 216

- *Periarthritis of Tuberculous Origin G Peco—p 587
- *Typhoid and Syphilis M Angel Marini—p 596
- *Intussusception in Infants M Ruiz Moreno—p 603
- *Thrombosis from Physical Effort O Ivanisovich—p 627
- Foreign Bodies in Digestive Tract Carlos I Allende—p 633
- Ophthalmoscopy Under Light Free from Red Rays K Gil—p 637
- *Research on Snake Venoms B A Houssay and J Negrete—p 649
- Idem Houssay and S Pave—p 680
- Idem Houssay et al—p 699
- *Toad Poison V Novaro—p 715
- *Nature of Bacteriophagy C E Pico—p 734

Tuberculin Treatment of Periarthritis—The young woman's fingers were all swollen at the second joint and tender. Then the knees and ankles developed similar periarthritis. Signs of inherited syphilis suggested specific treatment but no benefit followed a systematic course of neoarsphenamin. By exclusion tuberculosis was diagnosed, and under tuberculin treatment for four months the hands returned to normal aspect and approximately normal function.

Typhoid with Syphilis—Marini's case teaches that old latent syphilis may flare up during typhoid fever, and may prolong and render atypical the typhoid. The syphilis was

probably inherited in his case. On the forty-fifth day of the typhoid a papulous eruption developed. Under mercurial treatment recovery was prompt, the typhoid bacilli soon disappeared from the blood.

Intussusception in Infants—Fourteen of Ruiz' sixteen cases were in breast fed infants. There was no blood in the stool in four. The five infants who did not receive operative treatment until after an interval of two or three days, all died.

Thrombosis from Physical Effort—Ivanisovich adds two to the twenty-one cases on record in which edema of the entire arm, from thrombosis in the axillary vessels, developed after straining the arm in moving furniture, or other unusual and extreme effort.

Hemolytic Action of Venoms—Houssay and Negrete's extensive research with twenty different kinds of South American snakes confirms the specificity of the antihemolytic action of the antivenoms.

Toad Poison—Novaro relates an Argentina tradition that herpes zoster can be cured by binding a toad on the affected area. In two cases in which this was done, there was rapid ulceration and one patient, a robust young man, died in thirty-three hours. In the other case, ulceration persisted for nearly two months. Secretion from the parotid glands of toads (*Bufo marinus*) proved very toxic for pigeons, rabbits and other laboratory animals.

Bacteriophagy—Pico presents further evidence to sustain his contention that bacteriophagy is merely an activation of the normal autolysis of bacteria.

Archiv fur Gynakologie, Berlin

Nov 21 1922 116, No 2

- *Lipoids in Ovaries F v Mikulicz Radecki—p 203
- *Lithogenesis of Menorrhagia and Metrorrhagia A Seitz—p 252
- *Blood Changes Under Roentgen Ray Treatment K Heim—p 291
- *Protein Therapy and Coagulation R Salomon and E Vey—p 317
- Adenomyomas and Adenomyometritis S Westmann—p 333
- *Operability of Metastatic Ovarian Tumors E E Pribram—p 343
- *Tetany in the Pregnant W Niderhe—p 360
- *Sedimentation of the Blood A Mohnert and K Horneck—p 383
- *Laryngeal Tuberculosis and Pregnancy P Schumacher—p 391
- *Treatment of Eclampsia Stroganoff—p 406
- *Vaginal Operation for Genital Prolapse B Dittich—p 412
- Pathology of Tubal Pregnancy E Kratzenstein—p 421

Lipoids in Human Ovaries—The findings are analyzed and interpreted from 120 cases. The subjects ranged in age from a three months' fetus to the menopause. They confirm the corpus luteum as a gland with an internal secretion.

Changes in Blood from Roentgen Exposures—Heim recorded the differential blood count the day before and the day after deep roentgen-ray treatment, and again at weekly intervals. The effect of the irradiation on the different elements of the blood was pronounced, and proportional to the intensity of the application of the rays. His research emphasizes the necessity for waiting for the blood to recover its balance before repeating the exposure. He consequently advises a wait of six weeks after a radical operation before beginning prophylactic irradiation. Exposures with large doses modify the leukocytes so materially that eight weeks at least must elapse before the series is resumed.

Influence of Parenteral Protein Therapy on Coagulation of the Blood—In the research reported, various proteins and chemicals checked coagulation but had the opposite effect when diluted to one tenth. By intravenous or intramuscular injection, a pronounced change in the coagulation of the blood was evident. This may have a practical application as a preliminary to operations by enhancing the preparedness of the blood for coagulation.

Operability of Ovarian Tumors—Pribram reiterates the importance of seeking for a primary tumor elsewhere in all cases of cancer in the ovary. In two of the three cases described, the primary malignant disease was in the gall-bladder. His favorable experience suggests that metastasis in the ovaries does not necessarily preclude the successful removal of the primary focus in the alimentary tract or gall-bladder. The metastasis in the ovaries was probably from implantation in two of his cases. If lymphatics are involved, this modifies the outlook.

Tetany in the Pregnant—Niderche states that in the 70 cases of tetania gravidarum which he has found on record the infants had fatal convulsions in the first weeks in 12 cases abortion occurred in 3, the fetus was macerated in 4 and there was spontaneous or induced premature delivery in 4 and in 2, respectively. In a case personally observed, the tetany developed for the first time during the fifth pregnancy and returned at the sixth and seventh pregnancies, growing progressively more intense. The infant at the last delivery presented a combination of congenital tetany and a disturbance in bone growth which might be called congenital rickets. The parathyroid glands and the thymus seemed to be constitutionally inferior.

Sedimentation of the Blood Corpuscles—Mahnert and Horneck discuss the speed of sedimentation of the red corpuscles in puerperal septic processes under various treatments.

Pregnancy and Tuberculosis—Schumacher relates that the laryngeal tuberculosis became decidedly aggravated about the fourth month of the pregnancy in his ten patients. All died soon after delivery or interruption of the pregnancy except one who survived for two years in fair condition after abdominal supravaginal amputation of the pregnant uterus at the sixth month. This operation not only relieves at the time but wards off further pregnancies. One or both ovaries are left, and the operation is done under intraspinal anesthesia. Of the seventeen pregnant women with pulmonary tuberculosis in the first or second stages treated by amputation of the uterus, 83.3 per cent are still living in good condition from one to nine years later. He pleads for this operation in every case of laryngeal tuberculosis in the early months of a pregnancy. If approaching term, no operation offers any hope of success. With latent tuberculosis, he urges that the women should be reexamined every two weeks all through the pregnancy, so that the pregnancy can be terminated at the first signs of the flaring up of the process.

Treatment of Eclampsia—Stroganoff here brings down to date his experience with the "prophylactic" method of treating eclampsia, which he has been applying for twenty-four years—2,208 cases in all. The mortality of the mothers under it was 9.8 per cent and the mortality of the children was 12.9 per cent—less than with other methods. He advises supplementary venesection in the severer cases, and states that in the last seven years he has given larger amounts of the sedative during the first two or three hours. There have been no deaths during these seven years except of patients moribund when first seen.

Vaginal Operation for Genital Prolapse—Dittrich relates that three died of the 340 women on whom he has operated in this way. The deaths were all due to embolism.

Monatsschrift für Kinderheilkunde, Leipzig

November 1922 24 No 2

*Regeneration of Blood in Infancy H. Opitz—p. 113

Regeneration of Blood in Infancy—Opitz tried comparatively large infusions of blood in different anemic conditions in infants. The amounts to be infused were computed to bring the number of corpuscles in the child to normal. They were repeated after from four to ten days, as often as necessary. The results were very good except in two children with lymphosarcoma and myeloid chloroma. He believes that the injected corpuscles are not destroyed, because the signs of regeneration (erythroblasts, basophilic stippling, etc.) disappear from the blood. It is probable that the injected blood takes up part of the work and gives the bone marrow time to rest and recover. Mixed diet and a moderate reduction of milk may hasten the recovery of the patients.

Munchener medizinische Wochenschrift, Munich

Dec 15 1922 69 No 50

- *Blood Pressure During Sleep C. Katsch and H. Pansdorf—p. 1715
- *Constitution in Obstetrics and Gynecology A. Mayer—p. 1718
- Movement of Leukocytes and Pitt S. Griff—p. 1721
- Circulation of Cerebrospinal Fluid H. Strecker—p. 1726
- Sedimentation of Corpuscles A. Horvat—p. 1729
- Technic of Cultivation of Anaerobes Kimmier and Speth—p. 1740
- Heart and Breathing During Hypnosis P. Astruck—p. 1750
- Effluvia Necropies E. Fuld—p. 1751

Examination of Infant Nerves in Bavaria J. Meier—p. 1731
Vaccination Against Typhoid—p. 752
Accidents in Appendectomy A. Krecke—p. 1733

Blood Pressure During Sleep—Katsch and Pansdorf were able to study the blood pressure of patients during sleep. The main point was to lead the rubber tubes into another room to increase the pressure of the band slowly and read the pressure quickly. The systolic pressure is normally lower but the diastolic does not change, except for a slight increase during very deep sleep. Thus the amplitude of the pulse is decreased from both ends. Some patients with hypertension presented marked decrease in blood pressure, and "sleeping cures" might be advisable for them. Other hypertonics (two cases of uremia) had no decrease in the pressure.

Constitution in Obstetrics and Gynecology—Mayer reviews constitutional signs in gynecology. The movable retroflexion is a very frequent occasion for useless and superfluous operations. The endocrine disturbances are very important, and psychoneuroses are a much more frequent cause of supposed gynecologic disturbances than is realized.

Circulation of Cerebrospinal Fluid—Strecker's experiments show that drugs introduced into the lumbar sac in man reach the brain after a certain time and suggest that there is a circulation of the cerebrospinal fluid.

Sedimentation of Corpuscles—Horvat's experiments show the importance of the use of equal tubes and equal amounts of blood for comparison.

Psychic Influence on Heart and Breathing During Hypnosis—Astruck was able in the hypnosis to influence the action of heart and breathing very strongly. Several times he observed a bigeminal pulse during his experiments.

Wiener klinische Wochenschrift, Vienna

Dec 14 1922 35, No 50

- *Thyroid Problems B. Breitner—p. 969
- Sedimentation of Corpuscles H. Poindecker and K. Siess—p. 971
- Conc n No 51
- *Lymphatic Reaction H. Baar—p. 973
- *Epidural Injections in Sciatica F. Hogler—p. 974
- *Preparation of Colloidal Gold Solution E. Friedländer—p. 975
- Intensive Roentgen Ray Treatment G. Holzhnecht—p. 975
- French Views on Icterus F. Stehr—p. 976
- Conc n

Thyroid Problems—Breitner gives four types of difficult affection of the thyroid: hypotrophic hypothyroidism, in which production and evacuation of secretion are diminished; eutrophic hypothyroidism with normal production and insufficient elimination; eutrophic-hyperthyroidism with normal secretion and increased elimination; and hypertrophic hyperthyroidism where both are increased.

Lymphatic Reaction—Baar describes a case of tonsillitis in a 5 year old boy with leukocytosis of 18,000 and only 15 per cent of neutrophils. On recovery, there were 42½ per cent neutrophils. A subsequent injection of milk produced a neutrophil leukocytosis (75.5 per cent). Baar assumes not only an abnormal predisposition, but also some chemotactic action of the germs as responsible for the strong lymphocytosis.

Epidural Injection of Antipyrin in Sciatica—Hogler reports very good results from epidural injections of 10-20 cc of an aqueous solution of from 1 to 4 gm antipyrin. The injection should not be repeated before two days. When the pains are limited to the extremity, a perineural injection is sufficient.

Preparation of Colloidal Gold Solution—Friedländer found that the reduction of gold chloride is inhibited if the potassium carbonate contains bicarbonate. Cautious heating restores the needed purity.

Acta Chirurgica Scandinavica, Stockholm

Dec 22 1922 75 No 4

- Perforation of Gastric and Duodenal Ulcer F. J. Schmidt—p. 313
- Experimental Cancer Research J. Fibiger—p. 343
- Nanthosarcomas in Tendon Sheaths A. Kregg—p. 361
- Hematoma in Icterus Mucile in Typhoid I. Kest—p. 364
- The Steinach Operation K. Suid—p. 387
- Arterial Embolism F. Michelson—p. 427

Perforation of Gastric and Duodenal Ulcers—In 5 of 44 cases described there had been no history of stomach or duodenal disturbance.

treated by excision and suture of the perforation. The ulcer was excised longitudinally and the gap sutured transversally. A Witzel fistula allowed feeding from the start, and served as a safety valve. Smooth recovery followed thorough irrigation of the abdomen with normal salt solution at 40 C. Of the 22 reexamined later, only 2 have had a return of the ulcer, but patients should always be warned of the possibility of recurrence of both ulcer and perforation, the necessity of an ulcer diet, and the wisdom of remaining under medical control for some time.

Experimental Cancer—Fibiger prepared this French article as an address for the postponed congress on comparative pathology. His data indicate that predisposition to cancer is restricted to certain races and species, and probably also to certain organs. Experimental cancers have opened a vast new field for research in the problem of immunization. He remarks in conclusion that animals immunized against ingrafted cancer are as liable to develop far cancer as the nonimmunized.

Xanthosarcomas of Tendon Sheaths—In Krogius' four cases the growth was on the leg or hand and was safely removed. The patients were adults. In a girl, aged 11, there were several tuberous xanthomas and the incommencing ones were removed though some recurred.

The Steinach Operation—Sand's article was reviewed when it appeared in a Danish journal. It is in English here, and summarizes eighteen cases of epididymectomy by Steinach's method.

Arterial Embolectomy—One of Michaelsson's three patients survived the embolectomy. He recommends lifting up the vessel with a rubber tube instead of with a metal instrument.

Acta Pædiatrica, Upsala

Dec 16 1922 2 No 2

- *Comparison Between Medicinal Dietetic Treatment and Light Treatment in Rachitis I Jundell—p 113
- *Butter Flour Pap H Ernberg—p 149
- *Chorea R Nordgren—p 159
- *Genuine Contracted Kidney in Children A Wallgren—p 169
- *Treatment of Diabetes in Children N Johannsen—p 180

Comparison Between Medicinal-Dietetic Treatment and Light Treatment in Rachitis—Jundell reports twenty-one cases of rachitis treated partly by phosphorized cod liver oil and phosphate of calcium, partly by quartz lamp and partly by both methods. He measured the results chiefly by the softening of the bones of the skull. The first treatment, together with a reduced diet, is advisable in overfed children or when systematic treatment by light is not available. The light treatment is indicated in undernourished and sick (tuberculous) children.

Butter Flour Pap—Ernberg had good results in 375 cases and confirms the indications and contraindications of the browned butter-flour mixture in infant feeding.

Chorea—Nordgren observed increased frequency of chorea in certain periods which occur at the same time or follow closely an increased frequency of rheumatism.

Genuine Contracted Kidney in Children—Wallgren reports a rare case of genuine contracted kidney in an 8½ year old girl. No edema was ever present. The child died with symptoms of uremia (azotemic). Small parts of the kidneys were hypertrophic otherwise the picture resembled the contracted kidneys of adults.

Treatment of Diabetes Mellitus in Children—Johannsen reports favorably on Joslin's method in the treatment of seven diabetic children.

Hygiea, Stockholm

Dec 16 1922 S4 No 23

- *The Cerebellum S Ingvar—p 977

The Cerebellum—Ingvar presents this study of the cerebellum from the standpoints of anatomy, physiology and the clinic. He regards the cerebellum as a central ganglion for a specific sense which informs us of the relations between our body and the laws of gravity and inertia. As these laws affect all alike we can understand why the cerebellum, in all vertebrates, presents the same histologic picture.

Svenska Lakaresällskapets Handlingar, Stockholm

Dec 30 1922 48, No 4

- *Surgical Treatment of Gastric and Duodenal Ulcer E. Hedlund—p 209 Conc n
- *Syphilis as Factor in Thyroid and Pituitary Disease F Lennmalm—p 257
- Opacity of Cornea on Compression of Eye J W Nordenson—p 279

Surgical Treatment of Gastric and Duodenal Ulcer—Hedlund gives full summaries of 455 cases in which he has operated, with the history to date. Complete recovery was prompt and more certain after extensive resection of the pylorus than after any other operation. He is personally acquainted with most of the patients. There has been no evidence that removal of such a large part of the stomach has had any deleterious consequences. Local anesthesia alone was used in some of the cases, but even this does not guarantee against postoperative pneumonia.

Syphilis as Factor in Thyroid and Pituitary Disease—Lennmalm reports five cases of myxedema in syphilitic adults. The myxedema and recurrences subsided under thyroid treatment. He cites a number of similar cases from the records. In another group of patients, syphilitic thyroiditis developed in an old goiter. The symptoms were those of exophthalmic goiter, they materially improved in a personal case under mercurial and roentgen-ray treatment. Acromegaly in syphilis may retrogress under specific treatment. His personal cases of dystrophia adiposogenitalis and a large number from the literature indicate that syphilis is a comparatively frequent factor in this condition. Improvement under specific treatment is common, as also in diabetes insipidus.

Ugeskrift for Læger, Copenhagen

Jan 4 1923 85, No 1

- *Chronic Dyspepsia in Young Infants C E Bloch—p 1
- *Professional Roentgen Anemia K Faber—p 8
- *New Law on Marriage and Divorce—p 14

Chronic Dyspepsia in Young Infants—Bloch's experience has convinced him that a condition of chronic dyspepsia and atrophy in young infants is due to simple insufficiency of the digestive glands. This substandard state of the glands may be congenital, or be the result of overtaxing the digestive organs.

Fatal Acute Aplastic Pernicious Anemia in Roentgenologist—Faber relates the particulars of the fatal illness of Dr Nordentoft, who for twelve years had been intensively engaged in roentgenotherapy. Faber compares three similar cases since 1913, and three English cases of similar injury from the use of radium. He adds that means for better protection of physicians and attendants are an urgent necessity.

Medical Features of New Danish Law on Marriage—Some of the medical aspects of this law were mentioned in the News department recently, page 335.

Jan 11 1923 85, No 2

- *Insulin in Treatment of Diabetes A Krogh—p 21
- Autoserotherapy of Tuberculous Pleural Effusion V Petersen—p 25

Insulin in Treatment of Diabetes—Krogh relates the history of this new treatment of diabetes, of which he made a special study while in this country. Probably it will be long before insulin can be imported into Denmark. He discussed with the Toronto professors the possibility of Danish collaboration in further research, especially in the use of fish instead of beef pancreas. In collaboration with Drs Hagedorn and Johansen the work is now well under way at Copenhagen, with both fish and beef pancreas. Krogh arrived in Denmark December 12 and by December 21 the first batch of insulin was completed and its potency confirmed on rabbits. The methods of standardization have already been improved. In order to hasten matters, he decided to place the manufacture in the hands of a private firm, instead of a state institution. The state later can take it over, if found desirable. The price is to be kept down as low as possible as in America. [Krogh received the 1920 Nobel prize in medicine for his research on gaseous interchanges, capillary circulation etc.]

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CYSTS OF THE EXTERNAL SEMILUNAR CARTILAGE OF THE KNEE

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Ebner,¹ in 1904, was the first to describe cyst formation in the external semilunar cartilage. Since then there have been twelve other cases reported: one by Schmidt,² six by Riedel,³ one by Eden,⁴ and four by Ollerenshaw.⁵ The two cases reported here are apparently the first to be reported from this country.

REPORT OF CASES

CASE 1—History—C B, a man, aged 22, who entered the Presbyterian Hospital, Aug 24, 1920, had had stiffness and pains in the right knee during the preceding three years. They were slight at first, and worse during the winter months. There had been times during the summer months when the knee was practically normal. There had been several acute exacerbations lasting for two or three weeks, during which time both limitation of motion and pain had been considerable. The pain had been most marked over the lateral surface of the joint, although there had been some discomfort throughout the entire joint. There was no history of disturbance in other joints, and no previous diseases except measles during childhood.

Physical Examination—The patient was well developed, and examination gave negative findings aside from the region of the right knee. On inspection the knee appeared normal except for a small oval swelling over the lateral surface of the joint just above and in front of the head of the fibula. Motion was limited to 90 degrees, and produced considerable pain. On palpation, the swelling was fixed, tense, smooth and somewhat tender. There was no external evidence of fluid in the joint or of thickening of the synovia. A probable diagnosis was made of detached external semilunar cartilage, although there was no history of locking.

Operation and Result—Through a lateral incision in the line of the joint, the external surface of the semilunar cartilage was uncovered, an oval cystic swelling sprang from it. The joint was then opened and the entire cartilage and cyst excised. There was no excess of fluid in the joint, and the synovial lining appeared normal. The postoperative course was uneventful. Function in the knee returned to normal within two months, and has remained so up to the present writing, two years and four months later.

Pathologic Examination—The superior and inferior surfaces of the semilunar cartilage appeared normal, but there was an oval swelling 3 cm long springing from the middle portion of its convex lateral surface (Fig 1). On section, this proved to be a multilocular cyst filled with a thick, stringy, clear fluid (Fig 2). There was an extensive yellowish

white area of degeneration within the cartilage, extending inward to a depth of 1 cm. In the lateral portion of the degenerated area at the edge of the cartilage and base of the external swelling, there were numerous small cysts filled with mucinous fluid. A section for microscopic examination was taken through the middle of the external swelling, it included a triangular wedge of the semilunar cartilage (Fig 3). It disclosed degenerative changes in the center of the cartilage, becoming more extensive and marked as the lateral margin was approached. About the margins of this area the nuclei were breaking down and the coarse fibers of the intercellular substance were losing their outlines. The deeper portions of the degenerated area consisted of an irregular meshwork of shreds, throughout which were numerous small cavities and mucinous substance which took a hematoxylin stain. The cystic swelling springing from the side of the cartilage had a coarse connective tissue covering. The walls of the multilocular cyst consisted of thin, dense layers of mature connective tissue. There were numerous thin septums partitioning it, especially about the periphery, where the loculi were very small. Two or three of the larger loculi were lined by a fairly thick layer of young, richly cellular connective tissue. This layer contained occasional leukocytes, and showed hemorrhagic infiltration and mucoid degeneration along the surface. There was practically no leukocytic infiltration or vascular engorgement to be seen in any other portion of the section. The blood vessels about the surface of the external cyst were mostly normal, a few of the smaller arteries showing thickening and hyaline degeneration of their walls.

The changes were entirely degenerative in nature, there being none of the other evidences of inflammation. No lining of an epithelial or endothelial nature could be detected in any of the cysts, whether located in the older peripheral or more recent intercartilaginous portions of the diseased area.

CASE 2—History—M J, a woman aged 18 who entered the Presbyterian Hospital, Oct 11, 1922 during the last two months had had slight pain in the lateral portion of the right knee. It had been most marked when she arose to walk after sitting for some time. From the onset she had noticed a slight swelling over the lateral aspect of the knee. She had had the usual diseases of childhood, and tonsillitis. Tonsillectomy had been performed several years before I saw her.

Physical Examination—The patient was moderately well developed. Regional examination was negative aside from the right knee. Inspection of the knee revealed a very slight swelling just above and in front of the head of the fibula. There was full motion in the joint, but slight pain was experienced on complete flexion. On palpation the lateral nodule was tense and slightly tender. It lay in the plane of the knee joint.

Profiting by experience with the previous case, cyst of the cartilage was suspected, and an aspirating needle was inserted. A thick, clear, mucinous material was removed which confirmed the diagnosis.

Operation and Result—Through a lateral incision in the plane of the joint, the cartilage and attached cyst were excised. The joint was otherwise normal. The postoperative course was uneventful and there was complete return of function six weeks after operation.

Pathologic Examination—Gross. The superior and inferior surfaces of the cartilage and attached cyst were both normal.

1 Ebner A. *München med Wchnschr* 51 1737 1904
2 Schmidt Erhard. *München med Wchnschr* 53 1415 1906
3 Riedel. *Deut ch Zt chr f Chir* 132 167 1914
4 Eden. *Naturwissenschaftliche medizinische Gesellschaft zu Jena* 18 1911
5 Ollerenshaw, Robert. *Brit J Surg* 8 409 (April) 1921

in contour, but the color of the cartilage was considerably altered. The inner two fifths bordering on the concave margin presented a bluish, transparent, normal appearance, but the remaining lateral portion was opaque and yellowish white. Springing from the middle portion of the side of the cartilage, there was an oblong cystic swelling which measured 2.5 cm. in length by 1 cm. in diameter. Its outer

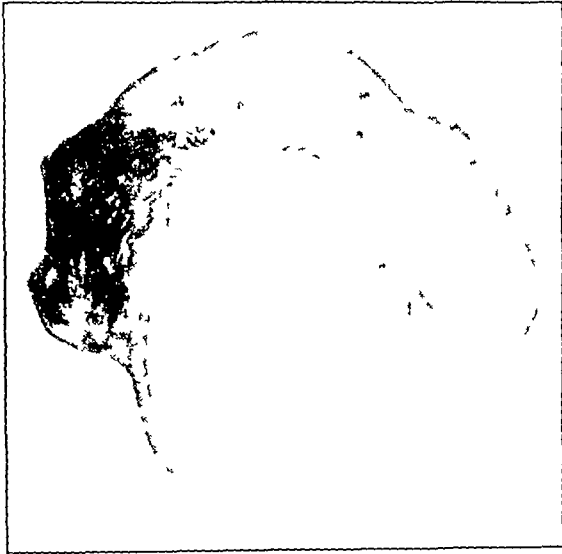


Fig. 1 (Case 1)—Top view of cartilage and cyst

surface was somewhat nodular. An incision was made through the middle portion of the cyst and cartilage. The cyst was multilocular, and filled with a stringy, clear, mucinous material. There was a wedge shaped, yellowish white area of degeneration extending into the cartilage for two fifths of its breadth. Small cysts were present in the



Fig. 2 (Case 1)—Incision through cyst and into cartilage showing cavities and areas of degeneration

outer portion of the degenerated area, the largest of which was the size of a grain of wheat. A second incision was made through the cartilage just anterior to the limits of the cyst, and here the yellowish white degenerative change was also present, but there were no macroscopic cysts.

Microscopic. A section cut through the middle portion of the cyst and cartilage disclosed that the outer wall of the

cyst springing from the side of the cartilage was composed of fairly thick, mature fibrous tissue. The cyst was multilocular, some of the cavities being quite large and possessing in places a richly nucleated connective tissue lining, but in most cases the lining of the cyst consisted of newly formed degenerating connective tissue, which in places was markedly hemorrhagic. Several of the smaller loculi about the periphery contained much blood. Some of the arteries, both large and small, were considerably thickened. There was no leukocytic or lymphocytic infiltration of the walls of the loculi. The necrosis of the newly formed connective tissue was marked by the presence of irregular, fragmented fibrilli and breaking down of nuclei, with a variable amount of extravasation of red blood corpuscles in the region. No endothelial or epithelial lining was seen in any portion of the loculi (Fig. 5).

The cartilage itself contained in its lateral portion a number of small cysts that were becoming confluent and were separated by thin plates of connective tissue in various stages

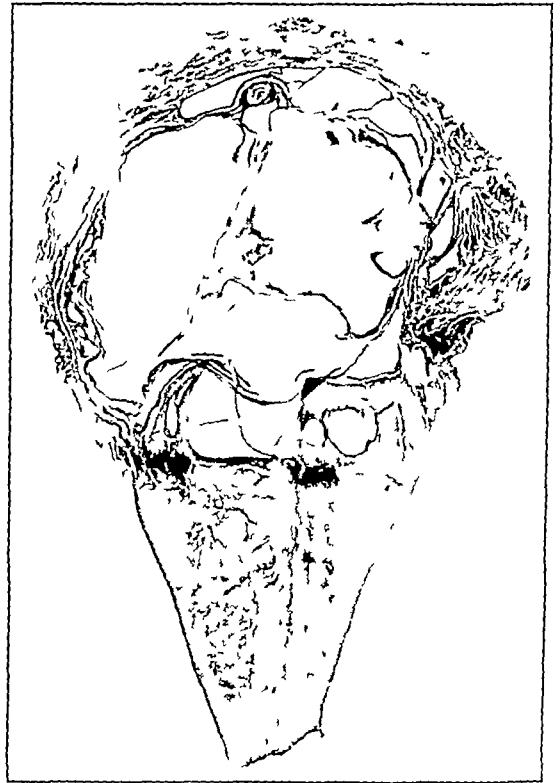


Fig. 3 (Case 1)—Microscopic section through cyst and cartilage

of disintegration. The rest of the wedge shaped degenerated area consisted of a mucinous substance, coursed by irregular fibrillae and staining deep blue with hematoxylin. Cultures made from the fluid aspirated from the cyst remained sterile.

COMMENT

The pathologic findings in these cases are identical with those of colloidal cystic swellings which develop in various connective tissues, especially on the back of the wrist, and are commonly designated as ganglions. Most ganglions of the semilunar cartilage have occurred in young adults. The youngest patient was 16 years old, and the oldest was 55, the average age at the time of operation was 25 years. There were ten males and five females.

Trauma seems to have played a role in some cases, but it is of less importance than in ganglions of other locations, particularly those about the wrist. Schmidt's case followed four weeks after a blow on the knee, and

in all of Ollerenshaw's four cases there was a history of slight injury. In the remaining ten cases, there was no history of injury. As the lesion has never been observed in the internal semilunar cartilage, it has been thought that the greater weight bearing of the outer side of the joint, due to the slight inward angulation at the knee, predisposes the external semilunar cartilage to injury and secondary cystic degeneration. That traumatism is an important factor in the production of ganglions in general is shown by statistics collected by Ebner, which disclose that in the upper extremities 82.5 per cent are in females and 17.5 per cent in males, while in the lower extremities the proportion is reversed, 87.5 per cent occurring in males and 12.5 per cent in females. The lower extremities are much more likely to be the seat of traumatism in males than in females. It is not known whether traumatism, either single or repeated, is the sole cause of the subsequent cystic degeneration or whether there is an added element of low grade infection.

Cultures were made of the fluid aspirated in Case 2, but there was no bacterial growth. None of the other cases were examined bacteriologically.

The pathologic change is essentially a degenerative one and most of the phenomena of inflammation are absent, which speaks strongly against bacterial cause of the disease. From the microscopic findings, Ledderhose⁶ assumed that ganglions arise from traumatism, which produces primarily an obliterating endarteritis, followed by degenerative changes in the surrounding connective tissue. Degenerative changes are present almost exclusively in the intracartilaginous diseased portion, but, in the walls of the multilocular cyst bulging from the side of the cartilage, proliferative changes are quite extensive. Fibroblasts form and break down

cysts show little obliterating change. It is most likely that the vascular alterations are simply a part of the degenerative process and not the initial change, as assumed by Ledderhose. Ollerenshaw reported an endothelial lining in some of the cavities and considered the lesion a true cyst, arising from misplaced endothelial

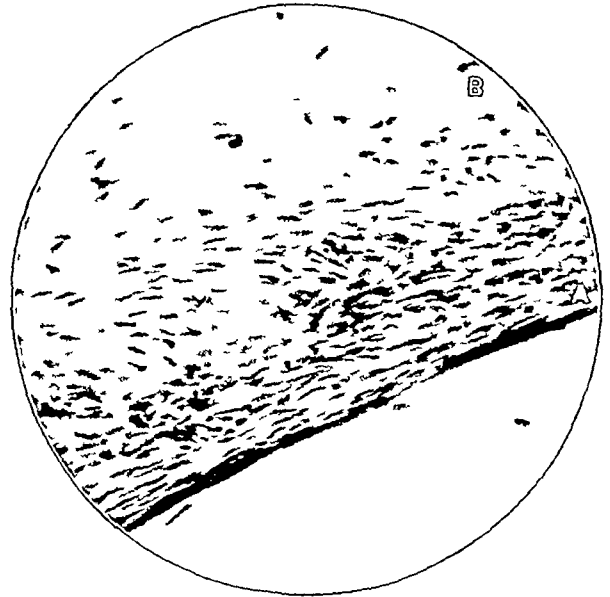


Fig 5 (Case 2)—Section of partition between two cavities showing (A) nuclei preserved along surface and (B) degeneration in deeper portion.

elements that form the joint lining. His view is not substantiated by the findings in any of the other cases.

The cysts seem to attain their maximum size within a few weeks, after which they remain stationary and continue to produce pain and a variable amount of interference with motion in the joint until removed. There is no recorded instance of spontaneous disappearance either of the symptoms or of the swelling.

The treatment consists in operative removal of both cyst and external semilunar cartilage. In four instances, only the cyst was removed, and in two of these cases there was return of symptoms shortly afterward, necessitating a second operation. Excision of both cyst and cartilage has resulted in a complete cure in all cases in which it has been practiced.

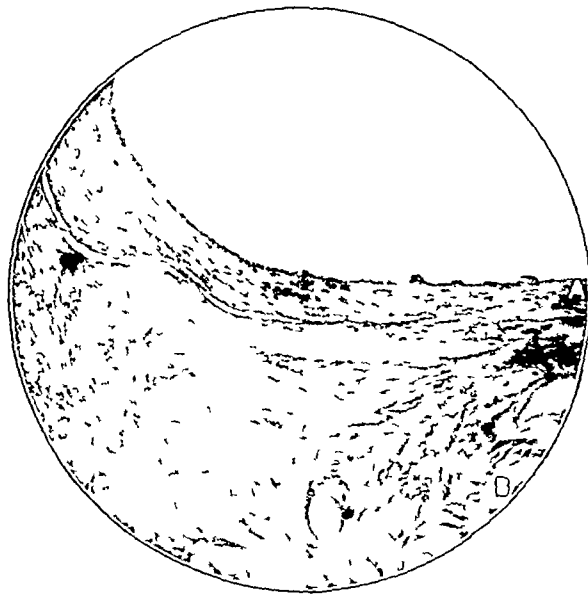


Fig 4 (Case 1)—Junction of large cyst and cartilage showing (A) connective tissue lining and (B) degeneration in cartilage.

after passing through various stages of maturation. A point against the primary vascular origin of the cysts in my two cases is that blood vessels are not seen in the intracartilaginous degenerated portions, and most of the arteries in the walls of the external multilocular

Study Man but Not by Arbitrary Standards—Since the time men became sufficiently numerous on the earth to make it necessary for them to take cognizance of one another we have been setting up arbitrary standards by which to judge him, we have erected codes and laws and customs by which to measure and coerce him. We have poured out pity and 'love' upon him and also hate and scorn, we have made him lovely toys such as aeroplanes and phonographs and tried to make him happy and when he was not happy we have tried to 'save' him from something and for something—we have done all these things and more and yet never have we seriously on any proper scale made an attempt to learn really what he is and to understand him for what he is. His possibilities for what they are his own desires and interest be they what they may. We are approaching nearer to the time when arbitrary standards built up without knowledge but as the result of empirical judgements will be put aside for a time and man will study man for what he is in the same way as he now studies other less important objects.—F. E. Williams. *Modern H* b)

PROGRESSIVE OSTEOMYELITIS OF THE FRONTAL BONE

REPORT OF CASE *

H B LEMERE, MD
OMAHA

History—A man, aged 32, consulted me, Jan 19, 1922, because of protrusion of the right eye. There was no history or general sign of syphilis. The patient had had epileptic attacks early in life. He had always suffered from bad nasal catarrh, and two months previously had elsewhere had an operation intranasally for frontal sinus empyema. Three weeks before I saw him, the right eyelids swelled and the globe protruded, but after a discharge of pus from the nose, this subsided.

Examination—The patient was well nourished and was above the medium height. He was drowsy and slow mentally. The temperature was 99.8. The right eye protruded, and the upper lid was markedly swollen. The conjunctiva was slightly infected. The cornea and media were clear. There was slight blurring of the margins of the optic nerve. The retinal veins were tortuous and swollen. Pupillary reaction to light was slightly retarded. Movements of the globe were somewhat restricted. The left eye was normal. Examination of the nose revealed creamy pus from the middle meatus on each side. There was a polyp on the right middle turbinate. There were pain and tenderness in the right temple and the external angle of the orbit. Roentgen-ray examination revealed all sinuses markedly cloudy except the left frontals and ethmoids.

Treatment and Course—January 20, the right frontal sinus was opened externally, it was full of pus, and the membrane was detached from the bone by the pyogenic process. There was no perforation in the bony wall. The floor and part of the anterior wall of the sinus were removed. The anterior ethmoids were removed and a good opening was obtained from the frontal sinus into the nose. The orbit was then explored for the cause of the protrusion and a collection of pus was encountered about an inch back from the brow under the upper wall of the orbit and just external to the outer limit of the frontal sinus. The abscess had perforated the upper wall of the orbit and was epidural. The bony opening was enlarged and connected with the opening made in removing the floor of the frontal sinus. Drainage tubes were placed in the orbit, and a large tube was placed to keep the frontal sinus open for observation. A free intranasal opening was made into the right antrum. February 2 the patient's condition was not satisfactory. There was pus pouring from both nostrils under pulsation. There was a swelling over the right cheek and in the roof of the mouth on the right side. The patient was dull mentally. The fundus showed no swelling of the disk but a

slight cloudiness of the vitreous. The protrusion of the globe had subsided. The pulse was 88, temperature, 98.6, respiration, 18. Under ether, both antrums were opened in the canine fossa, and through-and-through irrigation was begun. The right antrum was full of polyps.

February 22, the nose was fairly clear of pus. A swelling in the forehead was incised, and a large amount of pus escaped. The pulse was 84, temperature, 99.4, respiration, 24. In the next two months, thirteen abscesses over the frontal bone and in the lids and cheeks were incised, each time evacuating large quantities of pus. These incisions were all kept open by tubes until they ceased to discharge. The abscesses always connected with bone, which could be felt at the base of the abscess. In several of those opened early, the process of repair in the bone was found at necropsy to have proceeded to a point of almost complete recovery. The abscesses were of the nature of a cold abscess, and were unaccompanied by rise of temperature, pain or redness. An edema would make its appearance, and a few days later be followed by more circumscribed swellings with fluctuation. At no time was incision made into these swellings without

evacuation of creamy, syrupy pus. There was never a loose sequestrum demonstrable. The entire frontal sinus was kept open wide to observation and treatment during the course of the disease. The frontal sinus septum and part of the inner table failed to form granulations at any time. The antrums were free from pus four weeks before the patient died. In spite of negative Wassermann tests, intensive antisyphilitic treatment was carried out with neo-arsphenamin, mercurial injections, and iodids, without apparently affecting the disease in the slightest degree. Autovaccines were prepared and used in increasing strengths without producing any marked change in the patient's condition. Calcium lactate was given, but did not affect the progress of the disease. His nourishment was kept up well until the last. The surgical treatment of the abscesses consisted in opening them and keeping them freely open with tubes and irrigating frequently with surgical solution of chlorinated soda (Dakin's solution), mercuric chlorid and the like. Local applications of silver nitrate, 10 per cent, and tincture of iodine were made.

April 16 an abscess had formed beyond the frontoparietal suture, which had formed the boundary up to this time beyond which the osteomyelitis had not progressed. An abscess also had formed over the right mastoid, though hearing was good and the middle ear normal. Both of these were incised, with release of a large amount of pus. It was felt, however, that this further invasion meant the breaking down of the patient's resistance. His appetite was still good, pulse, 90, temperature, 101, respiration 24.

April 19, he became dizzy in the afternoon and refused food. He was more drowsy than usual. He had difficulty in speech. He complained of pain in the head. The pulse was 60, temperature 97, respiration 24.

April 20 both disks were pale, with no swelling and no tortuosity of the vessels. There was a conjugate deviation to the left. The patient complained of headache but was very quiet. Kernig's sign was positive. The neck was sore and

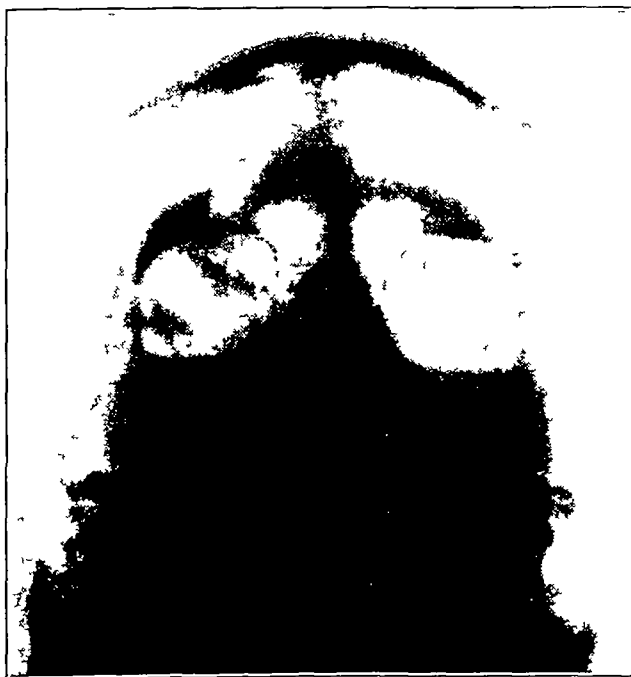


Fig 1—Appearance January 19 previous to operation. Right frontal sinus and both antrums cloudy. The whole bone surrounding the frontal sinus appears darker, perhaps indicating involvement of the frontal diploe at this time. The right frontal sinus appears larger than it was found to be when the actual boundary shown by dotted line was opened.

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* Candidate of the A. C. accepted by the American Laryngological, Rhinological and Otolaryngological Society, January, 1923.

stiff, there were slight muscular twitchings. The pulse was 60, temperature, 99.6, respiration, 30.

April 21, the patient's respirations ceased just before my arrival at the hospital. I found his pulse going, though he was apparently dead. Artificial respiration immediately improved his circulation, and his pulse became 84 and strong. Artificial respiration was kept up for one hour and ten minutes, but as the respiratory centers did not respond it was felt that they were completely overwhelmed. The pulse was 140 and thready. Two minutes after artificial respiration was stopped, the patient died.

Röntgen-Ray Examinations—The roentgenograms revealed the progress of the osteomyelitis. The plate taken when the patient first consulted me (Fig 1) reveals some haziness at the lower inner portion of the anterior wall. There is also a very slight change from the normal appearance of the frontal diploe. It is possible that this is the first stage of the pronounced osteomyelitis shown in the later plate, and that this may be the commencement of the osteomyelitis. A roentgenogram, taken February 18, outlined distinctly the portion of the right frontal bone that came away at necropsy, and there is evidently an effort here to sequestrate this piece and throw it off. Figure 2, also taken at this date, discloses the osteomyelitis already well developed. Figure 3, taken March 27, shows the bone very much as we found it at necropsy. All the cranial and facial bones seem to be involved with the exception of the occipital.

These plates would seem to indicate the necessity of frequent roentgen-ray examinations during the progress of a frontal sinus case when the patient is not doing well.

Laboratory Findings (by Dr A. S. Rubnitz).—The Wassermann examination of the blood, January 21, was positive, but was not considered conclusive, as the blood was taken soon after operation. January 26, it proved to be negative. There was no antisyphilitic treatment in the interval. The spinal fluid was examined January 23. There was no increased pressure, the cell count was 60 per cubic millimeter, chiefly lymphocytes, globulin was moderately increased. The Wassermann reaction was negative. There were no antisyphilitic measures taken before or during the period of these tests.

Cultures were taken at different times. January 23 pus from around the tube (frontal sinus) yielded a gram-positive bacillus (diphtheroid organism). February 19, a direct smear from the frontal sinus yielded a few small bacilli. When a culture was taken on blood agar the agar was almost completely liquefied, and had a very foul odor. The organism recovered was a small, gram-negative bacillus, most likely of the *proteus* variety. There were also a few gram-positive diplococci that looked like pneumococci. February 22, a smear from a skin wound around the anterior fontanel yielded some staphylococci and a few short chain streptococci.

The urine was about normal throughout. The leukocyte count was only slightly increased from 9,000 to 14,000. *Bacillus proteus* the colon variety, had probably much to do with the breaking down of the bone and soft tissues around them, although not the prime causative agent of the infection. The staphylococci found later in the superficial scalp wounds were most likely the first agents in the infection.

Necropsy (by Dr J. Jay Keegan).—The examination was limited to the head. Superficially there was an old drainage sinus opening in the right frontal region entering the frontal air cells. There was also a drainage wound in the right

mastoid region. A scalp incision was made across the head from ear to ear. Pus was found in the line of incision beneath both temporal muscles. The scalp was reflected anteriorly and posteriorly, disclosing a greatly eroded frontal bone in the region of the frontal sinuses. Only a much perforated bony framework remained in the supra-orbital region, this portion being easily separated from the squamous part. There was a considerable quantity of foul-smelling pus in the right frontal sinus. Creamy pus formed a thin layer over almost the entire surface of the frontal bone, extending laterally over the squamous portion of the temporal bones and including a part of both parietal bones. The involved bone had an eroded, roughened surface from the active osteomyelitis. In both temples, pressure revealed the bone to be freely movable on the dura, owing to surrounding necrosis. The calvarium was removed by the usual incisions with saw, except that in the anterior region separation was made without sawing (Fig 4). On removal of the skull cap pus was seen in a thin layer between the dura and the involved temporal and parietal bones, extending on the right to the mastoid region and communicating with the drainage wound. The dura was intact in all regions. Both frontal sinuses were filled with pus. The dura was opened, and the subarachnoid space

appeared normal over the frontal lobes except for moderate congestion of the cortical vessels. The frontal lobes were withdrawn, exposing the region of the optic chiasm where there was considerable fibrinopurulent fluid in the cisternal space. Following the usual methods of removal the brain was removed by incision of the optic nerves, oculomotor nerves and the tentorium. Along the petrous portion of the temporal bones there was a small pocket of pus just above the left seventh and eighth nerves beneath the tentorium. This pocket appeared to communicate with the foramen of entrance of the left fifth nerve root. Dissection in this region disclosed a questionably infected cavernous sinus on this side. The entire basal cisternal

subarachnoid space contained fibrinopurulent exudate. The ethmoidal cells were fairly clear. The sphenoidal cells were filled with a thick pus. There was considerable necrosis of the roof of both orbits, but no infection in the orbital cavity. The posterior surface of the petrous portion of the right temporal bone showed surface necrosis not penetrating the dura.

The petrous portion of both temporal bones and the mastoid cells were opened but did not appear to be deeply infected. Beyond the basal subarachnoid space there was no involvement of the brain proper.

The pathologic diagnoses were osteomyelitis of the frontal bone with contiguous involvement of the parietal and squamous portion of the temporal bones, frontal sinus infection, empyema of the sphenoidal cells, basilar meningitis and subarachnoid abscess in the region of the left seventh and eighth nerves.

The primary cause of death was infection of the frontal sinuses. Contributory causes of death were osteomyelitis of the frontal bone and basilar meningitis.

CASES ALREADY REPORTED

The first fully reported cases I have been able to find in the literature are those reported simultaneously before the section of Laryngology of the British Med-

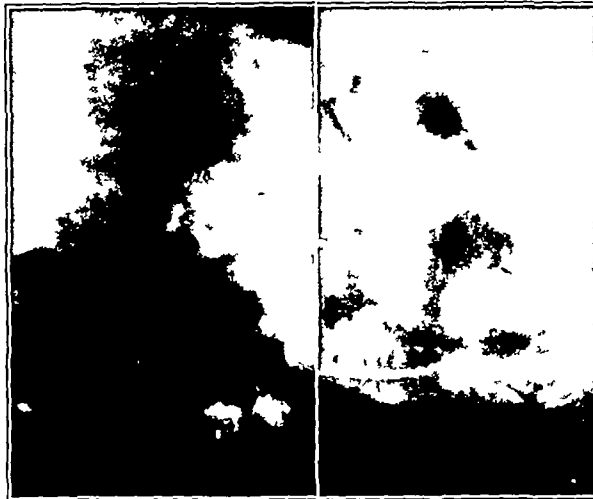


Fig 2—February 18 four weeks after riddled appearance of frontal ethmoid and superior maxillary sinus on left side and mottled appearance over frontal region of right side.

SIMPLE GOITER AS A RESULT OF IODIN DEFICIENCY

PRELIMINARY PAPER *

J F McCLENDON, PH D
WITH THE TECHNICAL ASSISTANCE OF
AGNES WILLIAMS, B A
MINNEAPOLIS

Chatin¹ advanced the hypothesis that simple goiter is correlated with a low iodine content of drinking water, but his opinion was not accepted. Heretofore the methods of iodine analysis have not been very well developed so as to determine small quantities in water. According to the director of the Geological Survey, iodine has been detected in waters containing 1,000 parts per million of chlorine and quantitatively in mineral waters containing 5,000 parts of chlorine per million. In Europe, certain determinations of the iodine content have been made, for instance, Macadam determined the iodine in 100 gallons of the Edinburgh water supply.

We have been using the method that I described before the Society of Biological Chemists in Toronto, Dec 28, 1922, and our results so far have all fallen into line with the idea that there is an inverse ratio between the amount of iodine in surface waters or those of shallow wells or springs, and the distribution of goiter. The accompanying map shows the general findings. The goiter data were taken from photostat copies of "Defects Found in Drafted Men," War Department, 1920, and also from Table xxxiii of that volume. This represents the examination of about two and one-half million drafted men, and yet this number was too small for accurate statistical work in relation to simple goiter. The probable error was very high, and in interpreting these data a certain amount of smoothing of the curves was done in order to make the zones continuous. The probable error is high, owing not only to the small number of cases of goiter reported, but also to the fact that different examiners may have different standards. If we compare the data by the draft board with that by Kerr² at Camp Lewis, we notice perhaps the greatest possible difference. Kerr finds 390 enlarged thyroids to each thousand recruits from the state of Washington, and the draft board finds only forty cases of simple goiter to each thousand men in the county in which the

GOITER—McCLENDON AND WILLIAMS

highest incidence of goiter was noted in Washington. As a matter of fact, the zones would probably not be continuous if the people remained in small localities and ate the food and drank the water from those localities.

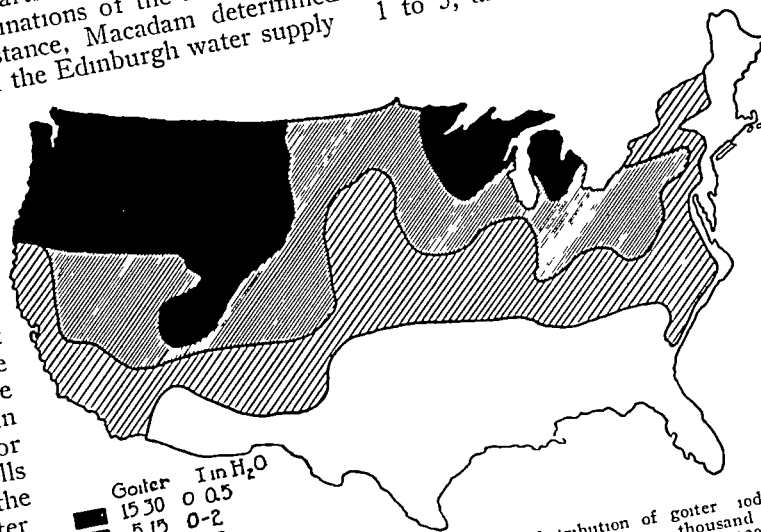
For instance, in olden times in Europe, particularly in the Alps, according to many observers, and in the Himalaya Mountains, according to McCarrison,⁴ it was often possible to find two villages very close to each other in which the incidence of goiter is very different. In the United States, however, owing to migration of the population and transportation of food and drink, there has been a smoothing out of the areas and obliteration of local differences. In fact, it is doubtful whether we are warranted in making four zones, perhaps three or even two are about all that are warranted. Two contiguous zones would necessarily shade into each other by migration. The goiter incidence in the different zones is quite distinct. In the first zone we find from 15 to 30 to each thousand men, in the second zone, from 5 to 15, third zone, from 1 to 5, and fourth zone, from 0 to 1.

The amount of iodine in drinking water from the few analyses so far completed shows in parts per billion in the first zone, from 0.01 to 0.1, second zone, from 0.015 to 0.12, third zone, from 0.005 to 0.09, and fourth zone, from 0.001 to 0.014. Of course, certain mineral waters are excluded from these analyses.

It is not intended to intimate that there is enough iodine in drinking water to prevent goiter. Even in case of the water of the lower Mississippi

and certain well waters that contain around 10 parts per billion of iodine, 10 liters (quarts) of water would have to be drunk before 0.1 mg of iodine was ingested. According to modern Swiss practice, 0.1 mg of iodine a day is about the dose recommended for schoolchildren for the prevention of goiter, and it is certainly impossible for the schoolchild to drink 10 liters of water a day. Furthermore, in the second zone the incidence of goiter is reduced very much from the first zone, and it is enormously less than in the very goitrous regions of Switzerland, and yet in some regions the iodine in the water is less than 0.1 mg in 100 liters.

We would then have to suppose that the amount of iodine in the daily consumption of a few liters, say 0.003 mg or less, showed some protective action. It seems more probable that the iodine in water is merely an indication of the iodine in soils which come in contact with this water, and that the iodine in soils is concentrated by the plants growing in the soils, and in that way the population over a given area receives iodine through the food. Therefore, water which is taken



Comparison of iodine in water supplies and distribution of goiter iodine in parts per billion of representative rivers goiter rate per thousand from Table xxxiii Defects Found in Drafted Men War Department, 1920 and manuscript curves smoothed

From the Laboratory of Physiological Chemistry University of Minnesota
* From the Laboratory of Physiological Chemistry University of Minnesota
1 Chatin, Compt rend Acad de sc 1850
2 Kerr W J Preliminary Survey of Thyroid Gland Among 2182 Recruits at Camp Lewis Washington Arch Int. Med 24 347 (Sept) 1919
3 Too long to wear a military collar

4 McCarrison Robert The Thyroid Gland in Health and Disease, New York William Wood & Co 1917

from the very shallow wells or from the run off of unpopulated areas would probably be the most typical. The amount of iodine in rivers is significant only in case the volume of the water is very large in proportion to the population along its banks, since it is very probable that all of the iodine given as drugs, besides all that taken in as food, finally finds its way into these rivers through sewage. The amount of iodine exported from Chile in 1904 was 500 metric tons. It is probable that a fair portion of this reached the United States. The amount of sewage contamination, however, could probably be measured by its chlorine content, and therefore any greatly contaminated waters could be excluded from the tables. This is evidenced by the fact that about 7,000,000 tons of salt are used in the United States each year.

As to the cause of this unequal distribution of iodine in natural waters and therefore possibly in the soil, there are at least three factors at work. In the first place, iodine is found in igneous rocks, and in the weathering of these rocks some iodine is liberated. Since the weathering of igneous rocks is very slow, the iodine content of water in contact with them would be very small. This is probably the case in western Oregon, which is largely covered by basalt in such a manner that the surface water or the roots of plants have no access to any iodine except that derived from the igneous rocks. Most of the iodine in the world is in the sea, which contains about 60 billion metric tons of it. Its concentration in the sea has probably been determined with some accuracy, since recent investigators agree pretty well on this point. Winkler⁵ found 0.038 mg of iodine in a liter of sea water. Cameron⁶ found about the same amount. I was able to confirm Winkler's work in a rough manner, finding about 0.04 or 0.05 mg of iodine in a liter of sea water. This is about 100 times as concentrated as in water from Zone 1.

Much of the United States at intervals from the Cambrian period to the Pliocene period has been submerged under the sea, and in that way has been soaked in sea water for ages, thus receiving a store of iodine, but, as the land emerged from the sea, this iodine was gradually leached out by the rains, except when buried 100 or more feet deep, as in salt deposits in Michigan, New York and Ohio. The region low in goiter, in the Southern states, was the only large region that was submerged beneath the sea in a late geological period (Pliocene), and the amount of chlorine in many of the waters, in the waters of Texas, for instance, indicates that the sea salts have not entirely leached out of the surface in this region. A salt lake covered Kansas and the adjacent territory during the Permian period.

The third factor in the iodine distribution is atmospheric iodine from sea spray and the burning of coal. The United States Geological Survey has carefully mapped the amount of sea water contaminating rain water, and finds that all of the chlorine in the rain water of New York and New England is due to sea spray. The quantity decreases rapidly as we go from the coast toward the Great Lakes, and it may be seen from the accompanying map that the amount increases from the coast toward the Great Lakes.

Iodine thus brought in amounts to 0.012 part per billion of rain water three miles from the coast, and decreases to about 0.0004 part per billion in the region of Lake Erie and Lake Ontario. This is added to the iodine derived from the soil, and may be significant. The effect of sea spray on the western coast is not shown by the draft board examinations in the prevalence of goiter. This is probably due to the obliteration of this beneficial effect by migration. The younger the person the less time he has had to migrate, therefore we should expect more localized conditions to be reflected in infants and children. In fact, a map made by Dr. D. C. Hall, professor of hygiene, University of Washington, shows that the Puget Sound region is a region low in goiter among schoolchildren. As we recede from the sound or go down to the narrow portion, goiter increases. Narrow bodies of water have not much effect in throwing sea spray into the air, as is shown by the fact that whereas the widest portion of Long Island Sound throws considerable sea spray into the air, the narrow portion of it does not. It is very probable that the schoolchildren all along the western coast are comparatively free from goiter. Besides the sea spray, the spray of Great Salt Lake contains considerable iodine, as I was able to find 0.07 mg of iodine per liter in it. This is evidenced on the accompanying map by an adjacent region of low goiter incidence as contrasting with the high goiter incidence in eastern and southern Utah.

The only way to make certain of this relation between goiter and iodine is to make a large number of analyses of water from different parts of the country. Owing to the large size of the sample required, it is impossible for one investigator to procure them by his own efforts. It is therefore hoped that the interested parties will send in samples, in return for which analyses will be sent them.

The method for collecting the sample is as follows:

One half teaspoonful of soda is placed in a tin dish pan. Several gallons of water are added and are evaporated over a brisk fire. Measured quantities of water are added until the required amount for the zone has been added. The entire amount should be evaporated to less than a quart and filtered into an evaporating dish and evaporated to dryness. The residue in the evaporating dish (but not that in the dishpan) is scraped out and sent to me. The smallest size sample required for Zone 1 is 25 gallons, Zone 2, 15 gallons, Zone 3, 10 gallons, Zone 4, 5 gallons. Larger samples give more reliable results.

Hospitals in Japan—In many of the general hospitals in Tokyo, male and female patients occupy the same wards. The lack of privacy is intensified by the presence of the nurses and the dearth of attendants. As a rule the number of patients is unlimited and they stay all day long. In some hospitals the patients are allowed to leave the ward at a day twice a week for a short time. The ward is very clean and the food is good. The patients are treated with much kindness and each patient has a nurse assigned to him. The patients are allowed to read and write and to receive visitors. The patients are allowed to leave the ward at a day twice a week for a short time. The ward is very clean and the food is good. The patients are treated with much kindness and each patient has a nurse assigned to him. The patients are allowed to read and write and to receive visitors.

⁵ Winkler, *Ztschr. f. angewandte Chem.* 55, 222 (1902).
⁶ Cameron, *Contribution to Can. Geol. Surv.* 1922, p. 75.
Press 1922, p. 75.
McClendon, *J. F. Science* 56, 222 (1922).

IS THE ACTION OF BACILLUS ACIDOPHILUS A STRICTLY BACTERIOLOGIC PHENOMENON?*

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The relief from chronic constipation and diarrhea by the ingestion of milk fermented with *Bacillus acidophilus* is a phenomenon worthy of further study¹ The beneficial effects obtained by such therapy might be due to a multiplicity of factors It has been held that chief among these is the ingestion of an increased volume, and more particularly the addition of considerable water to the daily diet As against this physical or mechanical interpretation, there is a chemical explanation, based on the presence of a considerable amount of lactic acid, together with the disintegration products of the organism *B. acidophilus* Finally, there is the strictly bacteriologic interpretation, which holds the living *B. acidophilus* organisms responsible for all benefits The experiments here described, which are still in progress, were devised in the hope of arriving at some definite conclusion regarding this phenomenon

column gives the total number of days under observation The next heading "sterile milk," is similarly subdivided to show the number of days during which normal defecations occurred while the patients were ingesting milk sterilized in the manner just described It is readily apparent that most of the these patients were severely constipated, eight of the ten patients had one normal defecation a week, or less When these patients were given daily 1 liter of sterile milk, it will be seen that there was little, if any, improvement in their condition While the first patient did show some improvement, the second patient became much more constipated The third patient continued to be severely constipated The fourth patient showed a slight improvement while the fifth became somewhat more constipated

For the following week, three of these patients, as well as five others, were given daily 1 liter of skim milk, sterilized as described, but inoculated and incubated for twenty-four hours with *B. acidophilus* in the usual manner,³ after which it was pasteurized by being heated in the Arnold sterilizer (steam at atmospheric pressure) for ten minutes In order to avoid extreme coagulation of the casein, which would make the milk

TABLE 1—OCCURRENCE OF DEFECATIONS IN CONSTIPATED PATIENTS UNDER DIFFERENT TREATMENTS

Patient	No Treatment		Sterile Milk		Pasteurized B. Acidophilus Milk		Regular B. Acidophilus Milk			After B. Acidophilus Treatment			
	No of Normal Defecations	No of Days	No of Normal Defecations	No of Days	No of Normal Defecations	No of Days	No of Defecations First 7 Days	No of Normal Defecations	No of Days	Lactose		Nothing	
										No of Normal Defecations	No of Days	No of Normal Defecations	No of Days
1	2	14	3	7	2	5	5	51	62			19	23
2	12	19	2	7	1	6	6	16	18			46	59
3	1	34	0	7			4	67	99	11	12	20	55
4	8	31	3	7			4	41	62	20	28		
5	12	18	4	7	2	5	6	32	61			12	24
6	1	7			2	6	6	47	50	52	68		
7	4	28			0	12	7	17	22	56	60	3†	6
8	1	12			0	7	3	23	42	Continued	almost daily defecation		
9	1	14			0	7	2	16	42	Continued	almost daily defecation		
10	0	14			0	7	2	11	42	Continued			

* More than one per day counted as only one

† Four months later

EXPERIMENTAL DATA

Patients with a history of chronic constipation were given the carmin test, and daily defecations were recorded for some time prior to any treatment, in order to establish the patient's intestinal motility The feces were examined microscopically, and the presence of gram-positive and gram-negative organisms was determined by a modified method previously described² Some of the patients were then given, during the period of one week daily doses of 1 liter of skim milk sterilized at 20 pounds pressure for fifteen minutes, which gives it a delicate cream caramel color This uninoculated milk is identical with that ordinarily inoculated with *B. acidophilus*, therefore, if increased volume is of prime importance, beneficial effects should be induced The data are summarized in Table 1

The heading "no treatment" refers to the period of time during which the patients have been under observation prior to any treatment In the first two columns under this heading is given the number of days during which the patient had normal defecations The second

indigestible, the acidity caused by the fermentation was first neutralized with normal sodium hydroxide The milk was plated out on whey agar after pasteurization, and was found to be sterile

From the data that are presented in Table 1, it will be seen that there was no improvement in the intestinal condition of any of these patients when they were taking pasteurized milk, over their condition when taking sterile milk Also, it may be seen that pasteurized *B. acidophilus* milk had a constipating effect, if any It is realized that the neutralization of the milk prior to pasteurization prevents any possible activity of the lactic acid which was formed during fermentation Therefore, in continuing these experiments, this deficiency has been overcome by adding lactic acid in an equivalent amount to the milk after pasteurization, with the same results It is impossible completely to separate the chemical from the bacteriologic factors in such therapy, for the phenomenon must be biochemical, in the sense that the bacteria secrete by-products of a chemical nature Nevertheless, it is of interest to determine, if possible, whether these by-products are of most importance or whether the most important factor is the actual multiplication of *B. acidophilus* in the intestine With this end in view, patients have been given the Berkefeld filtrate of *B. acidophilus* milk, which contains the essential acids, salts and enzymes, but no living bacteria

* From the Department of Bacteriology, Psychiatric Institute, Ward 5, Island.
1. Reutter, L. F. and Cheplin, H. A. The Transformation of the Intestinal Flora with Special Reference to the Implantation of *Bacillus Acidophilus*. Yale University Press, 1921.
Kopeloff, Nicholas and Cheney, C. O. Studies on the Therapeutic Effect of *Bacillus Acidophilus* Milk and Lactose. J. A. M. A. 79: 609-611 (Aug. 19) 1922.
2. Kopeloff, Nicholas and Beerman, Philip. Modified Gram Stains. J. Infect. Dis. 31: 480-482 (Nov.) 1922.

3. Kopeloff and Cheney (Footnote 1, second reference)

These results will be reported at a later date, the present indications being that such filtrate is of little benefit.

Since neither the physical nor the chemical interpretation of *B. acidophilus* therapy can be considered adequate, the patients were given daily 1 liter of the regular *B. acidophilus* milk, in most instances reinforced with lactose. It contained approximately 200,000,000 viable organisms to each cubic centimeter. It will readily be seen from Table 1 that the beneficial effects of this treatment were soon in evidence, and that relief from chronic constipation was obtained. This indicates that the phenomenon is strictly bacteriologic in nature. Under the heading "regular *B. acidophilus* milk," there are the usual subdivisions, but the first column contains the number of normal daily defecations occurring in the first seven days. This was inserted as a basis of comparison with the results obtained with sterile and pasteurized milk. There has been an improvement, often striking, in every patient studied. This is further substantiated by the persistent improvement shown under continued treatment, as evidenced by the data in the remaining columns under this heading. Frequently the patient had more than one movement a day, but, in order to leave no room for question, they have not been counted here. Thus, in all the columns marked "number of normal defecations," it is to be understood that the number of days during which one or more movements occurred is recorded rather than the actual number of defecations.

An interesting comparison is made in Table 2 on a percentage basis, between the period before and after *B. acidophilus* therapy, the number of days of observation being used as a divisor, and the number of normal daily defecations as a dividend. If the figures under the heading "regular *B. acidophilus* milk" are compared with those in the preceding columns, it will be noted that a marked increase has occurred. For example, in the first two cases, the percentage of defecations is about double that obtained with sterile or pasteurized *B. acidophilus* milk. In the last four cases, this increase is still greater. Quantitative data such as these may, in certain instances, yield a distorted emphasis, since the character of the stools is frequently as important as the number of defecations. Therefore, it is all the more significant that the character of the stools from patients under intensive *B. acidophilus* therapy is almost invariably more nearly normal than when there is no treatment, or sterile milk or pasteurized *B. acidophilus* milk is given. The stools are of a softer consistency, and the color is much lighter. On the other hand, certain limitations are recognized, chief among these that the size of each stool is frequently as important as the number of defecations. While *B. acidophilus* therapy has a general tendency to increase the size of the individual stool, frequently the movements increase only in number, and in some patients the size remains unsatisfactory. These considerations, which will be published later, are difficult to tabulate, but should receive due recognition in the general evaluation of this method of treatment.

Of further interest in this connection is another experiment that is corroborative of the fact that the action of *B. acidophilus* is a strictly bacteriologic phenomenon.

Two members of the institute staff were extremely susceptible to *B. acidophilus* milk. Diarrhea followed the ingestion of comparatively small amounts. Therefore it was determined to give them each 400 c.c. of *B. acidophilus* milk which

had been pasteurized, without their knowledge in order to eliminate so far as possible any psychologic factors. It is particularly significant that the reactions of these two persons were identical. Following the ingestion of the milk there was a certain amount of gas formed. This was not accompanied by undue tension or pain. Instead of having three or four defecations, as had previously been the case when 400 c.c. of the regular *B. acidophilus* milk was taken, each subject had only one normal defecation which was customary before retiring. Three days after this test each subject was again given 400 c.c. of regular *B. acidophilus* milk unpasteurized. Both were under the impression, however, that it had been pasteurized. Neither had any defecation, and both complained less of gas formation than previously with the pasteurized milk. Again they were given regular *B. acidophilus* milk in greater volume 800 c.c. under the impression that it was pasteurized, although it was not. With this amount, both patients had a diarrheal attack, curiously enough each recording three defecations one of these being semisolid, and one fluid. As a further check these subjects were given 800 c.c. of pasteurized *B. acidophilus* milk they being under the impression that it was the regular *B. acidophilus* milk which gave them diarrhea. Their reactions were again identical. Each had one abundant semifluid movement at about 6 p.m., but no more. Appar-

TABLE 2.—PERCENTAGE OF DEFECATIONS UNDER DIFFERENT TREATMENTS

Patient	No Treatment	Sterile Milk	Pasteurized <i>B. acidophilus</i> Milk	Regular <i>B. acidophilus</i> Milk		After <i>B. acidophilus</i> Treatment	
				First 7 Days	Total	Lactose	Nothing
1	15	43	40	71	85		87
2	10	30	17	82	89		8
3	3	0		57	67	96	36
4	26	45		57	67	91	
5	68	57	40	86	50		50
6	15		33	87	94	77	
7	15		0	100	80	95	
8	6		0	43	57		
9	7		0	30	39		
10	0		0	30	24		

ently, there was some stimulation of peristalsis but the results were not comparable to the effects produced by the regular *B. acidophilus* milk.

In addition to the foregoing data, further evidence may be presented. Thus, careful daily records of the defecations of all patients receiving this treatment have been kept over as long a period of time as possible, even after the ingestion of milk has been discontinued. While it would be premature to state any conclusion as to the persistence of the beneficial effects, several cases may be cited of women who had previously only occasional normal evacuations, but who had frequent defecations when under *B. acidophilus* treatment. Several months after *B. acidophilus* therapy had been discontinued there was still normal defecation.

Under the final heading "after *B. acidophilus* treatment" in Table 1, the subdivisions "lactose" and "nothing," which are further subdivided in the usual manner, indicate the results obtained after *B. acidophilus* had been discontinued, and the patients either did or did not receive lactose.

The first patient in this series had defecations on an out of twenty three days, or 83 per cent. after *B. acidophilus* therapy as compared with defecation on two or three days or 15 per cent. before treatment. Patient 10 had only one normal movement in more than a year. After taking lactose after *B. acidophilus* therapy there was a great improvement. She then continued to have normal defecations for almost two months, after which she had a normal defecation.

Patient 4 showed a 50 per cent improvement, but Patient 5 showed a slight retrogression. This emphasizes the variability of the individual reaction to such treatment, and the danger in generalizing. The next two patients showed striking improvement in bowel movements, two months after the treatment had been discontinued.

These observations have not been continued over a sufficient period of time to warrant any conclusion concerning the permanence of relief from chronic constipation. However, the records of two patients not included in this series, because they left the hospital prior to this experiment, have an important bearing on this question.

One patient had eleven normal defecations in 103 days (more than three months) before treatment. Following one month's intensive *B. acidophilus* treatment, she had 185 normal defecations in 231 days, or 80 per cent, for almost eight months after discontinuing treatment, as compared with 11 per cent originally. These total figures do not reveal the fact that during the last month the percentage was nearer 50, and that this diminution may become progressive.

Another patient had seventeen normal defecations in seventy-three days (two and one-half months). Under two months' intensive *B. acidophilus* therapy, she had fifty-nine normal defecations in sixty-one days. After discontinuing *B. acidophilus*, she had 121 normal defecations in 172 days (nearly six months). In other words, the percentage is 70, as compared with 23 originally. There seems to be no decline with this patient, since her percentage for the last month has been 77.

COMMENT

Considering these two cases with those already discussed, there is here evidence to invite the belief that with some persons the relief from chronic constipation may persist long after treatment has been discontinued. Unquestionably, individuals vary greatly in their reaction to *B. acidophilus*, and there are instances of patients approximating their former constipated condition when *B. acidophilus* milk is discontinued. The complexity of factors which determine any individual's gastro-intestinal condition makes it difficult to generalize on the benefits of any single mode of treatment. The fact remains that up to this time no patient, no matter how constipated, has failed to be relieved of constipation following an intensive course of treatment with *B. acidophilus* milk and lactose.

In this connection, another noteworthy point may be mentioned: an appreciable percentage of viable *B. acidophilus* organisms was recovered from some patients, months after their ingestion had been discontinued, indicating that a true implantation had taken place. Thus, in the patient who has been longest under observation, the first of the two patients not included in the series, 25 per cent of the total plate count of feces on whey agar were viable *B. acidophilus*, but this was not a constant finding. It may be something more than a coincidence that another earlier patient gave precisely the same percentage of viable *B. acidophilus* six months after discontinuing *B. acidophilus* milk. Two other patients previously noted, Patients 4 and 5, showed 80 per cent of viable *B. acidophilus* seventeen and twenty-one days, respectively, after discontinuing treatment.

The data herein presented are in direct contradiction to certain general statements made by Bassler and Lutz,⁴ which are unsupported by any evidence thus far published. No one recognizes the limitations of *B.*

acidophilus therapy more clearly than those who have actually conducted such research as is patent in the work of Rettger and Cheplin,⁵ Norman and Eggston⁶ and others.

Theoretical objections, therefore, can have little validity in the face of facts.

There are now various commercial preparations of *B. acidophilus* on the market. It is unfortunate that none of these which have come to our attention warrant recommendation, since experience based on their adequate and widespread use would be of great value.

The observations here reported are being continued.

SUMMARY

Subject to the limitations of the material under consideration, the following points have been established:

1 The action of *B. acidophilus* is not a physical phenomenon, since patients receiving sterile milk were not relieved of constipation.

2 The action of *B. acidophilus* does not appear to be a strictly chemical phenomenon, since patients receiving pasteurized *B. acidophilus* milk were not relieved of constipation.

3 The action of *B. acidophilus* appears to be essentially a bacteriologic phenomenon, since patients were relieved of constipation by the ingestion of milk fermented by *B. acidophilus*.

4 Relief from chronic constipation has persisted for six months after the ingestion of *B. acidophilus* has been discontinued.

5 Viable *B. acidophilus* organisms in appreciable numbers have been recovered from the feces of patients months after the ingestion of *B. acidophilus* milk.

INTERNAL HEMORRHAGIC PACHYMEINGITIS IN INFANCY

REPORT OF FIVE CASES*

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AND

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Internal hemorrhagic pachymeningitis occurring in infancy cannot be considered a rare disease. Finkelstein,¹ in 1911, reported six cases, and had records of fifty others. Rosenberg,² in 1913, compiled reports of thirty-eight cases. Feer³ saw five cases in three years. However, few cases have been reported in this country, and since 1915 relatively little has appeared in the literature concerning this disease.

The name would indicate that the process is a hemorrhagic inflammation of the inner surface of the dura. According to Rosenberg,⁴ the disease was first described in France, about 1835, under the name serous cysts of the arachnoid. There has always been a controversy regarding the pathogenesis of the disease. Virchow, in 1854, advanced the so-called "primary inflammation" theory to explain its pathogenesis. Prior to that, pathologists had considered the inflammation, when present,

* 5 Rettger and Cheplin (Footnote 1, first reference).

6 Norman, N. P., and Eggston, A. A. Intestinal Infections and Toxemias and Their Biological Treatment, New York, M. J. 116, 623, 626 (Dec. 6) 1922.

* From the Department of Pediatrics of Lakeside Hospital and Western Reserve University School of Medicine.

1 Finkelstein, cited by Rosenberg.

2 Rosenberg, O. Berl. klin. Wchschr. 50, 2272, 1913.

3 Feer, C. Bl. f. Schweiz. Aerzte 45, 598, 1915.

4 Rosenberg, O. Ergebn. d. inn. Med. u. Kinderh. 20, 549, 1921.

4 Bassler, Anthony, and Lutz, J. R. Bacillus Acidophilus. Its Veterinary Value in Intestinal Disorders. J. A. M. A. 79, 697-603 (Aug. 19) 1922.

as secondary to the hemorrhage and occurring in the process of organization

Boeckmann⁵ investigated a series of cases in which death followed operations on the brain or meninges, and in none was there a hemorrhagic pachymeningitis. He concludes that it takes more than trauma and aseptic hemorrhage to produce the disease. Wohlwill,⁶ after studying the gross and microscopic anatomy, concluded that 1. It is a primary proliferation of the subendothelial tissue, probably following a previous lesion of the endothelium. Fibrinous and serous exudations as well as hemorrhage are only accidental accompanying processes. 2. In neither the traumatic cases nor those which accompany a hemorrhagic diathesis does the histologic structure of the membrane speak for an origin through organization of a primary hemorrhagic effusion.

Marie, Roussy and Laroche⁷ tried to produce the disease experimentally. They employed dogs and rabbits, and injected them subdurally with (a) whole blood, (b) blood plus a killed suspension of staphylococci, and (c) a mixture of fatty acids and sodium nucleinate. With the last method they obtained in several instances a picture resembling internal hemorrhagic pachymeningitis. They infer from these findings that it is not a primary hemorrhage that produces the disease. Numerous other authors also oppose the primary hemorrhage theory.

Another theory has been offered by a third group, represented mainly by Jores and Laurent. These authors describe the condition as a primary noninflammatory proliferation of the subendothelial capillary layer. The nature of such a process has no parallel in human pathology. Rosenberg⁴ goes so far as to say that he was unable to find any fibrin in any of his cases, there were no inflammatory cells and no young connective tissue cells in the early stages. Also, the fluid from the cysts has the character of a transudate and not of an exudate. He says that he cannot agree with the descriptions found in most of the textbooks of pathology.

The picture described in most of the textbooks is this: There is a proliferation of the endothelial layer on the inner surface of the dura. In the early stage, a few leukocytes and some fibrin may be present. Later, fibroblasts and new capillaries grow out from the subendothelial layer, which is very vascular. The capillaries, being thin walled, are easily ruptured. The hemorrhages may be minute, and if so are soon resorbed, leaving only a brownish pigment, but if they recur, the membrane in time attains considerable thickness. When the hemorrhage is more extensive the membrane is pushed away from the dura, and as the cellular elements are digested or carried away, there remains a cyst containing a yellow fluid. A new

anemia, purpura and hemorrhagic disease of the newborn, are often blamed. Schwartz⁸ reported a case in which the meningococcus was found. Hemolytic streptococci have occasionally been implicated. Chronic nutritional disturbances have been believed to play an important role. Nearly all of Rosenberg's cases occurred in institutional infants who had been artificially fed since birth. He says that the condition is rare in private or dispensary practice. In reading the reports of various authors we find that in a majority no definite etiology could be assigned. Negative Wassermann reactions and tuberculin tests and sterile blood and spinal fluid cultures are the usual findings.

Perhaps the most plausible theory at present is that of Rosenberg who believes that internal hemorrhagic pachymeningitis is due to thrombosis of the cavernous sinus, as the result either of an infection or of a marantic condition. In a large percentage of his cases there was a bloody nasal discharge a short time before the disease manifested itself. Diphtheria bacilli were usually obtained by culture. However in some of the cases the rhinitis was syphilitic in origin. The inflammatory process extends from the ethmoid vein to the ophthalmic and thence to the cavernous sinus. The anatomic picture of hemorrhagic pachymeningitis he attributes to a passive congestion due to the obstruction of the veins emptying into the sinus, namely the middle meningeal, ophthalmic, central vein of the retina, ethmoid and supra-orbital. The hemorrhages into the retina and the usual localization of the process in the region drained by the middle meningeal vein are beautifully explained by this theory. He admits, however, that there are certain symptoms one would expect to follow in the course of this thrombosis which are not usually present with the pachymeningitis, and further that the thrombosis has never been found by him at necropsy, even though he has diligently searched for it.

The symptoms may be gradual or sudden in onset. Generally speaking they are those of increased intracranial pressure or meningeal irritation. Vomiting and convulsions are perhaps the most common reasons for bringing the patient to the physician. Bulging fontanel, enlargement of the head, cervical or general rigidity, increased reflexes, muscular twitchings, paralysis, hyperesthesia, somnolence, pressure pulse and changes in character of respiration are symptoms which are not

puncture is pathognomonic. A yellow subarachnoid fluid or one containing red blood cells is very suggestive. If the disease has been going on for some time, there will probably be enlargement of the head.

The mortality of this disease per se is said to be very low. The infants, however, succumb readily to intercurrent infections, especially bronchopneumonia. Goeppert⁹ thinks that the appearance of blood in the spinal fluid warrants a bad prognosis. Feer found a bloody fluid in all his cases, and still believes that in most of them recovery occurs. Many of the infants who live through the attack carry a permanent disability, such as chronic hydrocephalus, imbecility, blindness, deafness, paralysis, spasticity, or speech defect. D'Espine¹⁰ reported a case in which the patient left the hospital apparently in good condition, but returned a few years later with typical Little's disease. Rosenberg, who, in his early paper, gave a good prognosis has changed his opinion. He was able to locate a small number of his patients eight or nine years after the disease, and found that 70 per cent had some defect. He says that the severity of the disease bears no relation to the after-effects. Some with the most severe symptoms were later found to be normal, and those with mild symptoms showed serious defects.

The treatment is mainly symptomatic. In adults, surgery has been employed and favorable results have been reported. In infants drainage of the fluid by repeated punctures through the anterior fontanel has not resulted in much improvement, and Finkelstein says that it may be harmful. Gelatin injections have been used in an attempt to control the bleeding. In light of our present knowledge it is logical to supplant this with intramuscular injections of whole blood or with transfusions. If syphilis is suspected, of course antisyphilitic therapy should be instituted.

REPORT OF CASES

The five cases here reported were observed in the pediatric service of Lakeside Hospital in the last three years.

CASE 1—A L, a white boy, aged 20 months, entered the hospital, Oct 29, 1919, with a history of convulsions for one month which had been becoming progressively more severe.

On admission the child was in deep coma, and breathed only four or five times a minute. He did not respond to any external stimuli. The extremities were cold and cyanotic. At this time there were no localizing symptoms, and the fontanel, though open, was not bulging. There was a bloody discharge from the nose. Symptoms which might be construed as due to syphilis were a depressed nasal bridge and a deformity of the left forearm. The latter, however, appeared to be due to a healed fracture of both the ulna and the radius. There was an abrasion over the left eye, evidently from a mild injury.

During the first few days the child had numerous severe convulsions. Lumbar puncture at first yielded a clear fluid containing a few unchanged red cells. A subsequent puncture of the cisterna magna gave a clear fluid free from cells and globulin. An attempt was made to obtain blood from the longitudinal sinus, and a yellow fluid was encountered which did not clot on standing. Ophthalmoscopic examination revealed at first a hemorrhage near the left disk. The right retina was normal. A few days later there were hemorrhages in both retinas and slight edema of the disks. The "capillary permeability test" revealed a somewhat increased number of petechiae. Nose and throat cultures were negative for diphtheria bacilli.

November 1, there was some general improvement. However, a paresis of the right side could be made out, and the boy was apparently blind.

During the next few weeks there was gradual progressive improvement. November 12 clear yellow fluid was again obtained by fontanel puncture. The hemorrhages were gone from the right retina, November 11, but persisted in the left eye until the early part of January. Vision returned apparently to normal. The Wassermann reactions on the fluid obtained by fontanel puncture were always negative, but the clear spinal fluid, on two occasions gave a four-plus reaction when 0.5 cc was used, although the result was negative with 0.3 cc. Later two negative tests were obtained in all dilutions. There were five negative Wassermann tests on the blood. Red mercuric iodid and potassium iodid had been given as a provocative soon after admission.

He was discharged Feb 25, 1920, in good physical condition and weighed 8.7 kg, which was 2.1 kg above his weight on admission. The parents refused to bring him to the dispensary, and he was not seen again.

The significant features of this case are as follows. The suggestion of syphilis afforded by the depressed nasal bridge was not supported by the serologic findings even though provocative therapy was employed. The blood in all of five, and the fontanel puncture fluid in two, instances were negative. The spinal fluid, however, on two occasions, while negative for amounts of 0.1, 0.2 and 0.3 cc was two plus for 0.4 cc and four plus for 0.5 cc. Both preceding and following these tests negative reactions were obtained for all amounts. The bloody nasal discharge suggests diphtheria as a possible etiologic factor, especially as Rosenberg considers this infection to be of the greatest importance in the causation of pachymeningitis. Cultures were negative, though this of course does not absolutely exclude diphtheria.

CASE 2—M H, a white girl aged 10 months was admitted to the hospital Feb 19, 1921 because she had been vomiting and having convulsions for the preceding month. The vomiting was described as projectile in type and usually occurred immediately after feeding. The attacks of convulsions occurred only about once a week, but had been becoming more severe. The child had lost weight. Recently there had been some nasal discharge. The history showed that she had not thrived either at the breast or when taking condensed milk. She had held up her head at 4 months, and was now just beginning to sit up. The family history was negative except that one brother died of convulsions at the age of 10 days.

The infant was markedly undernourished and weighed only 3.5 kg. She appeared extremely ill. The extremities were cold and cyanotic. The anterior fontanel was 4 cm in diameter but there was no bulging. There were no definite neurologic findings. A few rales were heard in the bases of the lungs posteriorly. Shortly after admission she had a series of severe convulsions. Lumbar puncture yielded a bloody fluid. On centrifuging the supernatant portion was clear and of a lemon yellow color. It did not clot on standing. The Wassermann reaction on this was negative and cultures remained sterile. Nose and throat cultures were negative for diphtheria bacilli. Ophthalmoscopic examination revealed hemorrhages in both retinas. The patient continued to have convulsions, and died about twelve hours after admission. Before death she vomited "coffee ground material."

The necropsy was held the next morning. When the skull was opened the dura was injected. Beneath the dura on both sides, over the vertex, there was a flat blood clot which was adherent in some areas to both the dura and the arachnoid. The dura was slightly thickened and numerous petechial hemorrhages were present on its inner surface. There was some blood beneath the arachnoid. The thymus was rather large, and contained collections of fluid blood in both lobes. There was congestion of the bases of both lungs. Microscopically the dura showed hemorrhages on its inner surface and evidence of a mild chronic inflammation. The anatomic diagnosis was internal hemorrhagic pachymeningitis.

⁹ Goeppert, *Jahrb. f. Kinderh.* 61: 51, 1905.
¹⁰ D'Espine, *Cor. Bl. t. Schweiz. Aerzte* 45: 1790, 1915.

CASE 3—R. L., a boy, aged 1 year, was admitted, Sept. 28, 1921, because of paralysis of the left side following a fall. Three days previously the patient fell from a table. He cried a great deal, but showed no untoward symptoms, and the mother noticed no local injury. The next day he was standing by the door and fell, striking the right side of his head posteriorly. This fall was immediately followed by a convulsion which lasted an hour. The left side of the body was thereafter paralyzed and he did not regain consciousness. He vomited several times. The history brought out the fact that following birth he had been blue for several days, and was said to have had pneumonia. He was breast fed for three weeks, and was then given dilutions of raw milk. No orange juice had been given. He had gained regularly in weight, and had always been well except that for the past month the stools had been rather frequent.

The patient was a well developed and nourished child with excellent color and turgor. He weighed 7.5 kg. There was a flaccid paralysis of the left side. The head was drawn to the right, and there was conjugate deviation of the eyes toward that side. The anterior fontanel was normal in size and there was no bulging. A small area of edema and swelling was found on the right occiput. Both eyegrounds showed numerous hemorrhages. Roentgenograms disclosed no fracture of the skull nor evidence of scurvy or rickets in the extremities. The spinal fluid contained a small amount of fresh blood, probably due to trauma in withdrawal as the supernatant fluid was clear after centrifuging. This fluid gave a negative Wassermann reaction. No fontanel puncture was made because the parents objected. Nose and throat cultures were negative for the diphtheria bacillus.

The next day he had at first muscular twitching and then generalized convulsions, which lasted several hours. The temperature at this time ranged between 39 and 40 C. The white blood cells totaled 14,000. The urine was negative. The capillary permeability test was negative. Intramuscular injections of the parents' blood were given although the coagulation time was seven and one half minutes.

Improvement began the next day and continued until he was discharged against advice, October 7. The temperature had dropped to normal, and he was taking his feedings. The retinal hemorrhages were less distinct at this time. A communication from the parents one month later stated that although weak, he could move his left arm and leg, and vision was apparently normal.

The history strongly suggests that trauma was a factor in producing the acute picture of convulsions and paralysis in this case. The history relates two falls—one three days before the development of symptoms, and the other immediately before the appearance of the convulsions. It seems probable that the second fall was not responsible for the development of the convulsion but was a part of the general picture produced as a result of the injury received at the first fall.

The history of birth hemorrhage is also very suggestive. The parents stated that the physicians in charge had time and again despaired of the infant's life because of the attacks of cyanosis and apnea that he had for several days after birth. A wrong diagnosis at this time is not uncommon. Since, however, no punctures were made, we can only conclude that the history strongly suggests that this patient was a victim of birth hemorrhage. If this is correct, then the field was prepared, and the first fall was the exciting cause of the pachymeningitis.

CASE 4—L. S., a white boy, aged 4 months, was brought to the emergency ward of the Cleveland City Hospital, Aug. 20, 1922, after an accident in which he was thrown from an automobile. The mother stated that immediately afterward he was blue for a short time and that his head was "out of shape." Examination revealed a small contusion of the scalp and a separation of some of the bones of the skull along the suture lines. He was unconscious for a few hours and vomited nearly everything taken for twenty-four hours. Roentgen ray examination revealed no fractures. No other symptoms were noticed and he was discharged August 24. Four days later the mother brought him to the Lakeside dispensary with the complaint that he had vomited and was

irritable on the preceding day. She insisted that his head was "out of shape." He was admitted to the pediatric service of Lakeside Hospital. More historical detail revealed that at the time of his birth the mother was in labor thirty-six hours and that instruments had been used. One sister was suffering from Little's disease.

On admission the child's head measured 47 cm in circumference, and his chest 45 cm. The lambdoid suture on the left and the coronal and frontosphenoid suture on the right measured about 0.5 cm in width owing to separation of the bones. The anterior fontanel was rather tense but did not bulge. The temperature was 39 C. The knee-jerks were active, and that on the left was possibly slightly increased. Otherwise the child was in excellent physical condition, was being breast fed, and weighed 8 kg at the age of 4 months.

On puncture of the anterior fontanel to obtain blood a yellow fluid was encountered which contained about one twentieth of its volume of red corpuscles. Twenty-five cubic centimeters was removed at this time. The fluid did not clot on standing, but a small pellicle formed. Shortly after this puncture the child seemed more comfortable and smiled repeatedly. Ophthalmoscopic examination revealed normal eyegrounds.

The patient remained in the hospital for eighteen days without marked change in condition. Further examination of the retinas failed to reveal any abnormalities. Several more punctures of the fontanel were performed and as much as 50 cc of fluid was withdrawn at one time without completely emptying the cavity. No convulsions were observed and the fontanel never distinctly bulged, although a change in tension could be made out after the punctures. Fever was present throughout the entire stay at the hospital and varied from 37.5 to 39 C. The laboratory work is summarized below.

The child was readmitted October 6 because of vomiting and enlargement of the head—symptoms which, according to the mother, had appeared rather suddenly in the preceding two days. The head was now 48.5 in circumference and there was some bulging of the anterior fontanel and a fullness along the sutures. The temperature was 39 C and the child was very irritable. The eyegrounds were normal and there were no localizing neurologic signs. Puncture of the fontanel was immediately done, and 200 cc of yellow fluid was withdrawn. The temperature dropped somewhat and the irritability became less marked. Because he was nursing and it was difficult for the mother to come to the hospital he was discharged October 10. He attended the dispensary daily thereafter.

October 16, the mother reported that he had vomited again and that there had been muscular twitchings. He was again admitted to the ward. He seemed much more ill now than before. The temperature was 39 C and the leukocyte count 37,000. On the next day he developed a swelling of the left side of the scalp which was thought possibly to be a cellulitis. There was a bloody nasal discharge. Culture produced no diphtheria bacilli. The spinal fluid was normal. Puncture of the fontanel was not done. At this time several mild convulsions were noted and Cheyne-Stokes breathing was present for a short time.

Moist heat was applied to the swelling and it quickly subsided. The temperature dropped to normal and the child was discharged October 20. Since that time he has reported to the dispensary, has shown no fever, the general condition has been good and there has been no particular change in the condition of the head.

August 29 white blood cells totaled 25,100, hemoglobin 70 per cent. Urine examination gave negative results.

August 30 white blood cells totaled 25,250, hemoglobin 70 per cent, red blood cells 5,940,000, polymorphonuclears 34 per cent, lymphocytes 60 per cent, transitionals 3 per cent, large mononuclears 3 per cent, eosinophils 0, basophils 0.

August 31 the blood clotting time was 5 minutes, 15 seconds, bleeding time 6 minutes, 20 seconds. The capillary permeability test gave normal results. Fluid from fontanel puncture contained for each hundred cubic centimeters: calcium 65 mg, phosphorus 5 mg, potassium 163 m, sodium 311 mg, protein 0.133 per cent. The intracutaneous tuberculin test (1:1000) was negative.

September 4, the intracutaneous tuberculin test (1 1,000) was negative

September 5, the spinal fluid Wassermann reaction was negative

September 8, the blood serum contained calcium, 109 mg for each hundred cubic centimeters, phosphorus, 57 mg, protein, 779 per cent. Fluid from fontanel puncture contained calcium, 72 mg for each hundred cubic centimeters, phosphorus, 49 mg, protein, 127 per cent

September 13, fluid obtained by fontanel puncture contained protein, 185 per cent. The Wassermann test on this fluid was negative

October 6, the blood clotting time was 4 minutes, 20 seconds, bleeding time, 5 minutes, 20 seconds. The blood serum contained calcium, 97 mg for each hundred cubic centimeters, phosphorus, 48 mg, protein, 799 per cent. Fluid from fontanel puncture contained calcium, 79 mg for each hundred cubic centimeters, phosphorus, 5 mg, protein, 24 per cent

October 17, the white blood cells totaled 37,750. Urine examination revealed a faint trace of albumin

There can be no question that in this case trauma was the deciding factor in producing the acute picture of pachymeningitis. It is even possible that the trauma sustained in the automobile accident was the entire cause of the development of this condition, since nearly ten days had elapsed between the accident and the finding of pathognomonic symptoms or internal hemorrhagic pachymeningitis. However, this conception cannot be considered certain, as the history contains the fact that the mother was in labor for thirty-six hours at the birth of this child, and that instruments were used. A further important point is contained in the history, namely, that an older sister is suffering from Little's disease, a condition due in most instances to brain hemorrhage at birth. The head on admission was misshapen, a condition which, according to the mother, developed directly and immediately as the result of the automobile accident. The mother makes the statement that when she picked up the child from under the overturned automobile the child seemed as if dead, and its head was out of shape. On admission there was noticed a separation, to a distance measuring approximately 0.5 cm, of the lambdoid suture on the left side, and of the coronal and frontosphenoid sutures on the right side. These changes were in all probability due to the direct effect of the accident and not to the development of a large collection of fluid within the skull.

CASE 5—E. R., a colored boy, aged 2 months, was admitted to the outdoor ward of the Babies' Dispensary and Hospital, Sept. 11, 1922, because of convulsions. These began on the day of admission, and the mother said that he had previously been perfectly normal. The only thing of importance in the past history was that the baby was precipitated head first into the bucket before the physician arrived for the delivery. The baby was breast fed.

Examination revealed a well developed infant, weighing 5.2 kg. Intermittent convulsions lasting a few minutes each were observed. Between convulsions there was considerable spasticity of the extremities. The fontanel bulged slightly. The circumference of the head was 40 cm, that of the chest, 38 cm. There were hemorrhages in the left eyeground, the right was normal.

September 13, the clotting time was 5 minutes and 30 seconds, and the bleeding time 4 minutes.

September 14, the serum calcium was 76 mg for each hundred cubic centimeters, the phosphorus, 47 mg, and the protein 58 per cent.

A puncture of the left side of the fontanel, made, September 15, yielded about 20 cc of bloody fluid. This contained about one tenth of its volume of red corpuscles. The supernatant fluid was yellow, did not clot, and gave a strong reaction for bile pigment. The child continued to have convulsions, and on the next day another puncture of the fontanel was performed and more yellow fluid withdrawn. After this procedure the fontanel was less tense. This fluid contained 36 per cent protein, 63 mg calcium and 5 mg of phosphorus for each hundred cubic centimeters. The Wassermann reaction on this fluid was negative. The intracutaneous tuberculin test was negative.

The temperature on the third day after admission reached 39 C and then gradually dropped to 38 C. September 21 lumbar puncture yielded a clear fluid, without cells or globulin which gave a negative Wassermann test. On this day the clotting time was 6 minutes and the bleeding time was 4 minutes.

The infant continued to have convulsions at irregular intervals until the latter part of October. During the subsequent month, no convulsions have been observed and there has been no spasticity or change in reflexes. The general condition was good, and he gained in weight. October 27, ophthalmoscopic examination revealed that the retinal hemorrhages had disappeared completely.

SUMMARY

1. Five cases of internal hemorrhagic pachymeningitis have been observed in this clinic within a period of three years. This corroborates the statements of Finkelstein and Rosenberg that this disease is more common in infancy than is generally believed.

2. From the standpoint of etiology in our cases infections, especially syphilis and diphtheria, can be excluded in every instance except in Case 2, in which syphilis may by some be considered to have been a possible factor.

3. From the standpoint of etiology, a poor state of nutrition can be positively excluded in three of our five patients, two were exceptionally well developed and nourished infants, and the third was also in a good state of nutrition. The other two patients were in a very bad state of nutrition, but it is just as probable that this was the result, as that it was the cause, of the development of pachymeningitis.

4. From the standpoint of etiology, trauma can be implicated as a factor in four of the five cases. It would seem that subacute pachymeningitis from birth hemorrhage, rendered acute by further physical injury, would explain the development in some of our cases. In certain groups of infants, there may be a certain predisposition toward the development of pachymeningitis.

5. The prominent symptoms in these five cases which correspond with those described in the literature were:

(a) Retinal hemorrhages in four cases. In the one in which they were absent there was the largest collection of fluid in the subdural space.

(b) A positive fontanel puncture. This was obtained in the three cases in which it was performed. In one case a characteristic fluid was obtained by spinal puncture. In the fifth, puncture was not performed because of the attitude of the parents. As these two children were each about 1 year of age, and retinal hemorrhages were present, it is probable that a fontanel puncture, if made, would have given positive results.

(c) Convulsions. These were present in every case, but since convulsions occur as a result of other injuries and conditions, their appearance is suggestive but not pathognomonic.

(d) Bulging fontanel. This symptom was absent throughout the period of observation in three cases, and in a fourth the fontanel did not bulge until the second admission, when it bulged slightly, in the fifth case there was slight bulging on admission. In other words, the absence of a bulging fontanel does not speak against internal hemorrhagic pachymeningitis. A general state of collapse or widening of the sutures, may be sufficient to counteract the encroachment on the intracranial space by the development of a pachymeningitic cyst.

(e) Enlargement of the head. This symptom was not definitely present in any of our cases. In only one case was there possibly some enlargement.

(f) Nasal discharge This was present in three cases, and in two of these it was bloody in character. In one of these patients, however, the discharge did not develop the bloody character until long after marked evidence of the presence of a pachymeningitis had been observed. As no evidence of the presence of syphilis or diphtheria was found in any of our cases, it may be concluded that the nasal discharge was a coincidence or a result of the pachymeningitis, and not a symptom of an infection responsible for the development of this disease.

6 In addition, we made the following observations, which may possibly add to the present knowledge of the disease.

(a) In two of the cases in which the calcium content of the fluid obtained through fontanel puncture was determined, it was found to be decidedly lower than that of the blood serum, whereas the inorganic phosphorus content of the fluid and the blood serum was practically the same. Since these results are the same as the figures usually obtained by determinations on whole blood, it would seem logical to conclude that the fluid in these subdural cysts is blood, unaltered except for the solution or digestion of all or a part of the red corpuscles. This conclusion, however, is not supported by the amounts of sodium and potassium, which were the same as in serum, nor by the percentage of protein, which showed great variation.

(b) The coagulation time and the bleeding time were normal in the three cases in which the tests were performed.

CONCLUSIONS

1 Internal hemorrhagic pachymeningitis is more common in infancy than is ordinarily believed.

2 Trauma at birth or later, or both, seems to have been the most important etiologic factor in our cases.

3 Convulsions, retinal hemorrhages and a positive fontanel puncture form a pathognomonic symptom-complex in internal hemorrhagic pachymeningitis. A positive fontanel puncture alone may be considered pathognomonic, as may also retinal hemorrhages, provided the latter occur after the age of 3 months.

4 In any case in which symptoms indicate the presence of increased intracranial pressure or cerebral irritation, internal hemorrhagic pachymeningitis should be considered.

5 Marasmus or severely disturbed nutrition is not necessary for the development of internal hemorrhagic pachymeningitis, as three of our five cases occurred in well developed infants.

Plan to Decrease Blindness and Power Press Accidents—The American Engineering Standards Committee has formulated the first safety codes for power foot and hand presses that have been prepared in America. While no national statistics of power press accidents are available, it is the opinion of safety engineers that the high speed punch or forming press is one of the most dangerous machines in industry and that hundreds of fingers, hands and arms are cut off or mutilated in these machines every year. The National Committee on the Prevention of Blindness says there are approximately 15,000 persons in the United States who have been blinded by industrial accidents which is almost 15 per cent of the blind population of the country. Because of this, the U. S. Bureau of Standards cooperating with the War and Navy departments prepared an eye safety code which for several years has been studied by the Engineering Standards Committee and has been revised by this body.

POSTINFLUENZAL CHRONIC PNEUMONITIS

A CONDITION COMMONLY MISTAKEN FOR PULMONARY TUBERCULOSIS AND FREQUENTLY FOR HEART DISEASE

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At a conference on tuberculosis which I recently attended, three papers dealing with the differential diagnosis of pulmonary tuberculosis from three different points of view were read. None referred to a condition which I have found most frequently mistaken for pulmonary tuberculosis among patients presenting symptoms suggestive of tuberculosis who have been sent to me for special examination. I refer to a chronic postinfluenzal pulmonary disorder of long duration. A semichronic pneumonic sequel of influenza was recognized just after the epidemic of 1918. But the disorder I refer to is found in patients who are presenting themselves now, four years and more after the epidemic with a history of continuous pulmonary disease since that time.

Many of these patients have at one time or another been under treatment for supposed heart disease. All of them have been under more or less continuous treatment for supposed pulmonary tuberculosis ever since they had influenza, and were sent to our hospital with the diagnosis of probable pulmonary tuberculosis.

SYMPTOMATOLOGY

General Condition—These patients all complain that they have not been well since they had influenza; they are tired and weak, and lack staying power and the ambition to work. Some of them have tried to work from time to time, but could not keep at it. They all give a history of medical care in hospitals and sanatoriums a good deal of the time since the epidemic.

Great loss of weight is unusual, but they are often underweight. They usually look fairly well nourished. Occasionally there is a slight degree of emaciation. There is seldom any serious loss of appetite, and there is never the marked distaste for food sometimes seen in the tuberculous. Night sweats are uncommon. There is nearly always a marked degree of nervous irritability. The patients are easily excited, the condition being sometimes so severe as to interfere with their ability to make a living.

Pulmonary Symptoms—Cough, slight or severe, continuous or intermittent, is always present. It is usually more troublesome in the morning and in damp weather. There is nothing especially characteristic about it. All patients raise some sputum which may be slight in amount or abundant. Occasionally, the sputum is fairly abundant after a paroxysm of coughing and then there will be no more for some time. There is a mild degree of bronchiectasis. Frequently, small amounts of blood or blood-tinged sputum are raised, but I have never observed a real hemorrhage, even a slight one, in these patients. There is nearly always pain or soreness in some part of the chest at times. There is nothing characteristic about the pain.

Wheezing, which is so marked in some patients if the condition is diagnosed as asthma, is absent in all.

Cardiac Symptoms—All patients complain of shortness of breath and rapid and violent pulse.

heart on slight exertion. Nearly all have attacks of dizziness, especially when excited or after sudden activity of one kind or another. Sharp pain, localized at the apex, or a dull ache over the precordia, especially after exertion, is common.

PHYSICAL EXAMINATION

General Condition—The appearance of these patients gives no clue to their condition. Sometimes, they “look sick,” they have a tired drawn expression and the skin has an unhealthy appearance, but, as a rule, they look pretty well.

Lungs—Examination of the lungs yields a variety of findings, with changes slight in extent and character, or marked, and appearing to affect the whole of both lungs.

The chest usually shows no change in shape, but there are exceptions. I recall only one case in which there was infraclavicular and supraclavicular depression. I now have under observation one patient with a very marked “barrel chest.”

The expansion of the lungs, so far as this can be judged by the motility of the chest on respiration, is usually good. In cases presenting pleural adhesions, the diaphragm or the whole lung on one side will sometimes show a diminished excursion.

Resonance may be good throughout, in some cases, there is even hyperresonance. In perhaps half the cases, there is some dullness over one or both bases behind. There may be a slight dullness at the apex, but usually the apexes show little or no change. Changes in resonance from day to day are sometimes observed.

The breath sounds are usually harsh, rough and noisy, and expiration may be prolonged. Sometimes, there is pleural thickening, and the breath sounds are distant. Spoken and whispered voice sounds show the corresponding change. No marked change in tactile fremitus can usually be found.

Noisy squeaks, and sibilant and sonorous râles are usually heard. The râles may be only at the bases, or may be scattered throughout the lung. It is unusual to find them confined to the apexes, but occasionally this is the case. It is very unusual to find the râles confined to one apex. I have never observed a case in which the burst, or shower, of medium moist râles, so typical of tuberculosis, could be heard at the apex persistently after expiratory cough. Occasionally, there is evidence of a slight friction rub on some spot at the base.

Roentgen-Ray Examination—Sometimes there are apparently normal findings, but sometimes definite pleural thickening, corresponding to that found on physical examination, is reported. More commonly, the roentgenologist recognizes that the lungs do not look normal, but will not make a definite diagnosis. The reports speak of rather diffuse thickening, fairly extensive peribronchial thickening, dilatation of the entire bronchial tree, tortuous and interwoven bronchi, moderately thickened bronchi, small areas of increased density, infiltration of the lower lobes, mottling at the base, and moderate thickening of the hilum. They sometimes say that bronchitis cannot be ruled out, tuberculosis cannot be ruled out or peribronchial tuberculosis cannot be ruled out. On two occasions, roentgen-ray diagnosis of possible tuberculosis at the base was made. In one case, roentgen-ray reports indicated findings suggestive of old conglomerate tubercles, but no evidence of active parenchymatous tuberculosis. On two occasions, the roentgen-ray diagnosis of pulmonary sclerosis was suggested. The roentgen-ray findings vary

from time to time in the same patient. Different observers sometimes interpret the findings differently, but we almost never get a definite diagnosis of apical tuberculosis in the reports of these cases. A special expert study of the findings in this condition is much needed.

Temperature—Usually, the temperature is about normal. In some cases, the afternoon temperature will occasionally rise a little above 99 F.

Sputum—There is nothing characteristic about the sputum. Tubercle bacilli are absent. Pus cells are often abundant. Curschmann’s spirals and Charcot-Leyden crystals have not been found. We have not found influenza bacilli. On one occasion, an organism resembling pneumococcus, which was pathogenic for mice, was found.

Etiology—In all these patients the onset of the condition dates immediately from a severe attack of influenza—practically always complicated by pneumonia. The condition may, indeed, be described as a pulmonary involvement accompanying influenza which has never fully healed.

NATURE OF THE PATHOLOGIC PROCESS

As I have not seen any fatal cases, the pathologic process cannot be accurately described, but from the physical findings there must be pathologic changes of some sort in the lungs. The changes are rather diffuse, they may be confined to the bases, but rarely, if ever, to the apexes. Bronchitis may be in evidence. A slight degree of bronchiectasis is sometimes present. Emphysema is sometimes marked. Some degree of diffuse fibrosis may be present. Pleural thickening, especially at the base, is common.

TYPES OF THE DISEASE

In most of the cases all, or almost all, of the symptoms and signs described will be found to some extent. That is, we do not see pure cases of asthma, bronchitis, bronchiectasis, pleurisy, or effort syndrome. But a case usually falls into one or another group, according to the prominence of certain signs and symptoms, and may be described as of the asthmatic type, the bronchiectasis type, the bronchitis type, the effort syndrome type, or the type presenting chiefly pleural involvement.

COURSE OF THE DISEASE

There seems to be no great change in the condition from year to year, nor are there “ups and downs,” so frequently seen in tuberculous patients, as the result of change of environment.

DIFFERENTIAL DIAGNOSIS

Tuberculosis—The course of the disease seems more even than that of tuberculosis, the patients never seem to grow progressively worse. Toxic symptoms, if present, are those of effort syndrome and general nervous irritability, and are unlike those seen in tuberculosis.

The process almost never localizes in one or even in both apexes as in tuberculosis, when localized, the process is at the base, when diffuse and extensive, the changes involved are not so great or of the same character as in tuberculosis, so that it is usually easy to recognize that we are not dealing with tuberculosis. While the roentgen-ray findings are not usually clear and definite, at least they do not indicate definite apical tuberculosis. The absence of tubercle bacilli in the sputum on repeated examinations may be helpful.

But the most important points of evidence as to the proper diagnosis are (1) the history of severe influenza and pneumonia continued into a chronic, nonprogressive

pulmonary disorder, and (2) the entire absence of the burst or shower of fine to medium moist rales at the apex after expiratory cough, so characteristic of pulmonary tuberculosis.

Heart Disease—Practically all of these patients exhibit the signs and symptoms of effort syndrome. Nearly all of them complain of dyspnea on slight exertion, palpitation, pain around the heart and tachycardia. When, in such cases, a systolic murmur is heard—and this is common—with perhaps an occasional extrasystole, the physician not familiar with effort syndrome will often make the diagnosis of heart disease. But further examination will show the lively reflexes, tremors of extended fingers, marked respiratory sinus arrhythmia, excitability, and other evidence of nervous instability characteristic of effort syndrome.

I have never known one of these cases to be diagnosed as cardiac syphilis, but the symptomatology in those cases with prominent effort syndrome and less prominent pulmonary symptoms might suggest the possibility of this condition. In many of the cases the second heart sound seems slightly prolonged and has a slight puffy quality along the left border of the sternum, especially toward the end of expiration, probably due to rapid reduplication of the second sound. The history of the case, the negative Wassermann reaction and the absence of an aortic diastolic murmur and of any other evidence of syphilis, serve to rule out cardiac syphilis.

I have never found evidence of organic heart disease in any of the patients.

Hyperthyroidism—The nervous irritability and tremor are sometimes prominent enough to lead us to determine the basal metabolism, but with no evidence of exophthalmos, thyroid enlargement or increased basal metabolism, hyperthyroidism can be ruled out.

Asthma—Sometimes emphysema and wheezing are marked, and the patients have attacks which they describe as asthmatic. Three cases have recently been referred to me with the diagnosis of asthma. But the wheezing is more or less continuous, perhaps in milder form when the patient is quiet and in severe form in attacks resembling asthma after too strenuous activity. These patients do not have the typical sudden and unexplainable attacks of asthma with periods of complete relief between attacks. They do not show sensitivity to test proteins, and they do show the signs and symptoms already described which are not present in true asthma.

Bronchiectasis—Some of these patients show the signs and symptoms of bronchiectasis, but the bronchiectasis is of a mild type, and evidence of other forms of pulmonary involvement is present.

INCIDENCE

It is difficult to make any definite statement as to the frequency with which this condition occurs. Figures as to the number of cases that I see would probably give a wrong impression as to how common the condition is. For as chief of medical service at a sanatorium, I have referred to me the more puzzling cases and pulmonary disorders in greater proportion.

tuberculosis with the postinfluenzal nontuberculous, pulmonary conditions described in this paper? We will see cases of pulmonary disease in which the tubercle bacillus cannot be found in the sputum, and cases in which physical changes characteristic of pulmonary tuberculosis cannot be found in the lungs, which are nevertheless, diagnosed as possible or even probable pulmonary tuberculosis. But in the case of a patient giving a history of severe influenza and pneumonia, preceded by good health and followed by chronic pulmonary disease, a diagnosis of pulmonary tuberculosis should not be made unless either physical or roentgen-ray findings show the definite characteristics of pulmonary tuberculosis, or the sputum shows tubercle bacilli. It is possible that pulmonary tuberculosis may attack a person suffering from this postinfluenzal pneumonic condition, so that the two conditions may be present in the same patient, or that pulmonary tuberculosis may immediately follow a severe case of influenza, but I have never seen this combination of conditions.

REPORT OF CASES

Roentgen-Ray Examination—The roentgenologist reported findings consistent with tuberculosis of the lower lobes or with pulmonary syphilis.

CASE 2—History—A man, aged 30, whose condition had been diagnosed as active pulmonary tuberculosis, myocarditis and asthma, was referred for examination about three weeks after leaving a tuberculosis hospital against medical advice. He had always been well, until August, 1918, when he had a severe attack of influenza followed by pneumonia, which kept him in the hospital two months. Since that time, he had never been well, and had done little work, spending most of his time in hospitals. He had had a cough, and had not been strong. He became short of breath after very slight exertion. He had dizzy spells, but he did not faint. At times, he had pain in both sides of the chest, in front and behind. He raised much sputum, which, he said, was sometimes blood-tinged. He had attacks of palpitation. He did not have asthmatic attacks.

Physical Examination—The patient was small, but fairly well nourished. He had good color and looked healthy. The pupils reacted to light. The knee jerks were lively. He showed no exophthalmos and no thyroid enlargement. The tonsils had been removed. There was no cervical adenitis. The nasal septum was straight, and breathing space sufficient. The extended fingers did not tremble.

The pulse was 78, regular and of good quality. The apex impulse could be felt, but not seen, in the fifth space, 7 cm to the left of the midsternal line, 1.5 cm inside the nipple line, and inside the midclavicular line, dullness corresponded. There was no increase in dullness upward or to the right. No thrill could be felt. The heart sounds were of good quality. The pulmonic second sound was slightly accentuated. No cardiac murmurs were heard.

The lung expansion was good, and equal on the two sides. The percussion note was resonant over both lungs throughout, front and back on the two sides, in fact, there was slight hyperresonance. But the degree of resonance showed slight change from time to time. The breath sounds were very rough, harsh, and noisy throughout both sides. There was no marked change in fremitus. Throughout both lungs, during both inspiration and expiration, noisy squeaks could be heard. But there were no persistent moist râles after cough.

No marked changes were noted in the roentgen-ray examination of the lungs.

Many specimens of sputum had been examined, but tubercle bacilli had never been found.

Fever was not present. The Wassermann reaction was negative. The urine was normal.

CASE 3—A man, aged 28, sent from another hospital to our hospital with a diagnosis of pulmonary tuberculosis, had been treated by his own physician for heart disease and bronchitis over a period of three years.

He had no "rheumatic" or syphilitic history. He was always well until he had influenza in 1918. Since then, he had been under medical care. He has not been able to hold a job because he could not work steadily.

He had been weak and tired, and had a cough. He raised a moderate amount of sputum, and sometimes, he said, a little blood. He complained at times of severe pains in the chest. He slept poorly. He became short of breath after climbing one flight of stairs. The heart pumped violently on slight exertion. From time to time, he had dizzy spells, but did not faint. He said that he was very nervous and easily excited. His weight had been about constant. He did not have night sweats. His appetite had been good.

Physical Examination—The patient was slender and pale, with pale mucous membranes. The cheeks were sunken, and he looked tired. The pupils reacted to light. The knee jerks were very lively. There was no exophthalmos and no thyroid enlargement. The tonsils were not large or septic, and there was no cervical adenitis. The nose showed ample breathing space. The extended fingers did not tremble.

The pulse was 78 of good quality and regular. No point of maximal apical impulse could be felt or seen. The left border of the heart was in the fifth space, 8.5 cm to the left

of the midsternal line, 1.5 cm inside the nipple line. There was no enlargement upward or to the right. The great vessels were not enlarged. The heart sounds were not very forcible. With certain phases of respiration, a short systolic murmur could be heard. There was no diastolic murmur. The aortic and pulmonic sounds were of about equal intensity. The second sound was not reduplicated. Systolic pressure was 120, diastolic, 85.

The motility of the lungs was good, and equal on the two sides. The percussion note was slightly dull at both apices behind, and at both bases, especially the left, behind. There was no marked change in fremitus. The breath sounds were harsh over both apices, and were distant at both bases, especially the left, behind. Inconstant, coarse, sibilant râles could be heard over both upper lobes. But there were no persistent moist râles after cough. The findings showed change from time to time.

Many examinations had been made of the sputum, tubercle bacilli were never found. Roentgen-ray examination showed no marked change in the lungs. The Wassermann reaction was negative. The urine was negative. In the last few months, the temperature had rarely been a shade above 99 F.

CASE 4—A man, aged 24, sent to the hospital with a diagnosis of heart disease and bronchial asthma, who gave no "rheumatic" or venereal history, had never been ill until four years previously, when he had a severe attack of influenza. He had never been well since. After the attack, a cough remained, and the patient raised a moderate amount of sputum. One day, during a violent coughing spell, he raised blood or blood-tinged sputum. He was very short of breath. Almost every night, he had attacks of wheezing, and became "choked up," so it became necessary to sit up in bed. From time to time, he had sharp pains through both sides of the chest. His weight remained about constant. He had never had any rise of temperature while in the hospital.

Physical Examination—The patient was well developed and well nourished, with good color. The knee jerks were lively. The extended fingers did not tremble. The pupils reacted to light. There was no exophthalmos, and no thyroid enlargement. The tonsils were not large or septic, the teeth were in good condition, there was no cervical adenitis. (He had a deviated septum, which was corrected by operation about a year previously.) His breathing space was sufficient. There was no clubbing of the fingers. There was no pulsation in the neck.

The pulse was 92, regular and of good quality.

The maximal impulse of the apex was felt, but not seen, in the fifth space, 7 cm to the left of the midsternal line, 2.5 cm inside the nipple line, 2 cm inside the midclavicular line. Dullness corresponded. There was no extension of dullness upward or to the right. The vessels were not enlarged. A very short systolic murmur was heard at the base. After a little exercise, the third heart sound could be heard, but no diastolic murmur. The heart sounds were of good quality. Sinus respiratory arrhythmia was not marked. The second sounds were about equal in intensity. The second sound was not reduplicated. The systolic blood pressure was 110, diastolic, 60.

Roentgen-ray examination of the heart had shown enlargement of the right auricle.

There was a slight lag of the right chest on respiration. There was slight dullness over the right upper lobe in front and behind. Vocal and tactile fremitus showed no marked change. At the right base behind, expiration was slightly prolonged, and a few noisy râles were heard, which soon cleared up. There were no persistent medium moist râles after cough. At times, when the wheezing was bad, the lungs were full of sonorous and sibilant râles.

Skin protein tests were all negative.

The sputum had been examined many times, but tubercle bacilli were never found.

The Wassermann reaction was negative. The urine was normal.

The temperature remained normal.

512 Commonwealth Avenue

ALIMENTARY LEUKOCYTOSIS IN
EIGHTY NORMAL MENA STUDY IN REFERENCE TO THE CRISE
HEMOCLASIQUE OF WIDAL*HENRY M FEINBLATT, MD
BROOKLYN

The statement by Widal, Abram and Iancovescu,¹ in 1920, that leukopenia following a standard protein meal is to be regarded as a delicate test for the presence of hepatic insufficiency suggested the advisability of studying a series of postalimentary leukocyte curves in normal persons. As the original article by Widal and his co-workers reported only eleven control experiments, it seemed wise to try the test further on a larger group of healthy men.

Widal's test appears to rest on a sound experimental basis. It is known that the injection of a certain quantity of commercial peptone into the general circulation of a dog will promptly result in a crise hémoclasique. This syndrome is an evidence of upset of the colloidal balance of the blood, and is characterized clinically by leukopenia, a fall of blood pressure, hypercoagulability, and a change in the refractive index of the serum.

If after a heavy protein meal, samples of blood are taken either from the portal vein or from the general circulation, they will yield on chemical examination no trace of either proteose or peptone. However, by a biologic reaction, Widal was enabled to demonstrate the presence of these substances in the blood of the portal vein. For this purpose, he momentarily established an anastomosis between the portal vein and the inferior vena cava of a dog during the digestive period by a process similar to that utilized in making an Eck's fistula. Several minutes after the connection had been made, a typical crise hémoclasique resulted. This experiment was controlled by performing the same test on unfed dogs. In the latter animals, no crisis was observed. These studies show that the products of digestion which are normally absorbed into the portal vein, can, when they gain entrance into the general circulation, cause a disturbance of the colloidal balance of the blood analogous to that resulting from the direct injection of commercial peptone.

By withdrawing 40 cc of blood from the portal vein of a dog during the height of the digestive period and immediately introducing it into the saphenous vein of the same animal, Widal was able to induce an artificial crisis. Confirmation was added to this experiment by the work of Roch and Gautier² in 1922. As ascitic fluid is a portal transudate, these workers reasoned that the entrance of this fluid into the general circulation should produce a crise hémoclasique. This proved to be the case, the white count, in one experiment on a woman with Laënnec's cirrhosis, falling, forty-five minutes after the subcutaneous injection of the fluid, from 10,540 to 6,200 cells. The blood pressure likewise was lowered.

On the basis of his investigations, Widal formulated the hypothesis that the peptones, proteoses, and other

disintegrating protein substances found in the portal vein during the digestive period, are arrested and transformed by the liver. This action he designated as the proteopeptic function of the liver.

To be consistent with the foregoing data, it seemed probable that the proteopeptic function would be deficient in various hepatopathies, that this defect would be associated with a crise hémoclasique following alimentation in persons thus affected, and finally, that our knowledge of this subject could be utilized clinically in devising a method for detecting insufficiency of the liver. Further research proved that these surmises were true.

The technic of the test proposed by Widal is very simple. The subject to be examined abstains completely from food for a period of at least five hours preceding the test. This detail is of great importance, as the ingestion of nitrogenous food, no matter how small the amount, interferes greatly with the reaction. A leukocyte count is made, and then the subject drinks

200 gm of milk (a glass of milk, the exact amount not being essential). Subsequently, the leukocytes are counted at intervals of twenty minutes for a period of two hours. Normally, there is slight leukocytosis following the ingestion of the milk, and the count never falls below the pre-alimentary level.

The occurrence of postalimentary leukopenia is considered pathologic and an evidence of hepatic insufficiency. This leukopenia, when present, usually appears in the

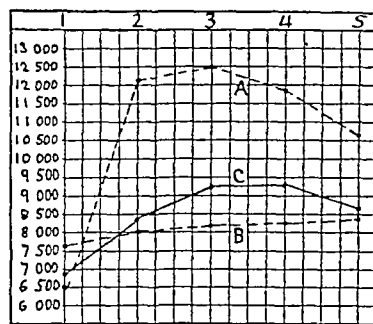


Chart 1—Post-alimentary leukocyte curves in eighty normal persons. 1 after five hours fast and before test meal. 2 one half hour after milk. 3 one hour after milk. 4 one and one half hours after milk. 5 two hours after milk. A maximal degree of leukocytosis. B minimal degree. C composite curve of leukocytosis in eighty normal persons. In every instance some degree of leukocytosis was observed. The interrupted lines A and B represent the limits of variation. C is the curve of the cases in which the maximal and the minimal degrees of leukocytosis respectively occurred. The solid line C represents the composite curve of normal post-alimentary leukocytosis, the average of the curves obtained.

first hour. In one of Widal's patients it was as late as an hour and a half in coming on. The other signs of the crise hémoclasique, viz, the fall of blood pressure, the increased coagulability of the blood, and the diminished refractive index of the serum, accompany the leukopenia. The last manifestation, however, is the most sensitive and the easiest to determine. It was therefore recommended by Widal that chief reliance be placed on this evidence in determining the existence of a crise.

That leukocytosis following the ingestion of a meal rich in proteins is the rule has long been known. But, if this physiologic phenomenon is to be employed as a foundation on which to build a clinical test, it is very essential to establish the fact that the response is uniform for normal persons. More specifically, it becomes obligatory to investigate thoroughly the physiologic reaction resulting when the protein dosage is reduced to the small quota contained in a single glass of milk.

Widal studied eleven normal persons and sixteen patients in whom the liver was intact, and found that, in all instances, the ingestion of a glass of milk, or in fact, even of larger quantities of protein, left the subject free from a crise hémoclasique.

From the Clinical Laboratory, Department of Internal Medicine, Long Island College Hospital.

1 Widal F, Abram I, and Iancovescu N. L'épreuve de l'hémoclasie digestive dans l'étude de l'insuffisance hépatique. Presse méd 28 893 (Dec 11) 1920.

2 Roch M and Gautier P. Choc hémoclasique chez les pleurétiques et les ascitiques par auto-injection du liquide de l'épanchement. Presse méd 30 209 (March 11) 1922.

It seemed to me that a test of this delicacy should be substantiated by a larger number of observations on normal persons. Leukocyte counts are subject to such great variations, depending on numerous factors, that it appeared beforehand as if alimentary leukopenia must surely occur in a certain definite percentage of healthy men. To record the leukocyte curves noted in

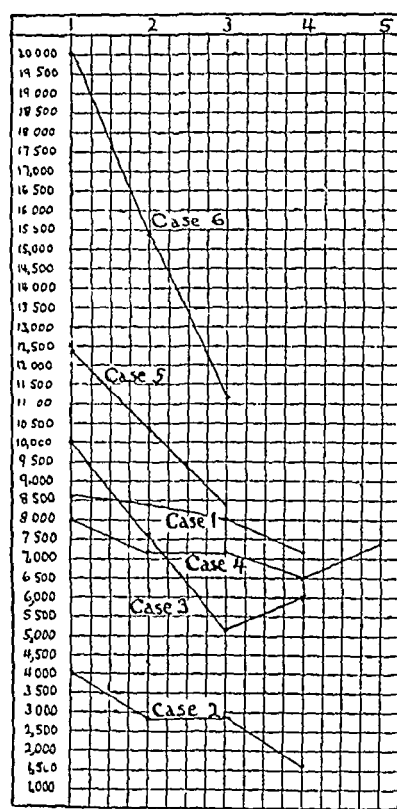
TABLE 1—LEUKOCYTE CURVES IN EIGHTY MEDICAL STUDENTS AT INTERVALS OF ONE-HALF HOUR FOLLOWING INGESTION OF 200 GM. OF MILK

Subject	After 5 Hours Fast	After Ingestion of 200 Gm. of Milk				
		½ Hr	1 Hr	1½ Hr	2 Hr	2½ Hr
1	6500	8400	9700	8700		
2	7200	7600	9200	7800		
3	7400	9600	9250	10480	8600	8480
4	7400	8700	9500	10050	9300	
5	7200	9400	10300	8500		
6	7300	8200	8000	9200	8400	
7	7600	8400	8800	10400		
8	7500	11500	10200	10200	8000	
9	7300	8200	9100	8200		
10	7300	7900	8200	7000		
11	7100	7000	8400	8000		
12	7200	8600	8900	9000		
13	7100	8500	8700	9400		
14	7400	9200	9450	8750		
15	7200	9400	9400	8400		
16	8200	10300	10400	10200		
17	7100	9800	10500	8000		
18	6300	9100	10200	7500		
19	7500	8300	8900	9400	8700	8200
20	7200	8800	10240	10400	8500	
21	6000	9300	12200	10500		
22	7000	9400	8000	7500		
23	7300	8100	8500	8300		
24	8000	9100	9500	9700	8600	
25	7400	9200	9800	10700	9400	
26	7800	8400	9500	10400	9000	
27	7400	6000	9200	10800	9000	
28	7700	9750	10300	11400	10500	7000
29	7700	7600	8000	10800	9700	
30	7100	8500	9200	8000		
31	8400	9200	12000	10000		
32	6700	7200	8340	9400	8400	
33	9500	10000	10500	11400		
34	9400	12500	13100	14000		
35	8000	8500	11500	14400		
36	6000	12500	10000	9500		
37	6400	10700	11700	9000	8600	7600
38	6800	9600	10500	10700	9400	7360
39	12000	14200	15600	13500		
40	7700	12500	15000	12400	11700	
41	7400	9000	13000	7700		
42	7500	9450	10400	10400		
43	8000	9600	10600	1160	12700	
44	7800	8700	9700	10400	9300	
45	7500	8300	9000	10600	11180	9800
46	7000	8600	10050	9260		
47	7300	8200	9280	9000		
48	6400	8850	10000	10700	10000	
49	7200	9000	11400	12600	10300	
50	6500	8200	10800	11600	10500	
51	7800	8300	9000	1060	9000	
52	7200	9500	12400	12700		
53	8700	8800	8500	8810		
54	7400	7400	8500	9000		
55	9000	9800	10200	11400	10000	
56	7200	8700	8500	9700	9000	
57	6400	7700	8600	9700		
58	7600	8200	9000	8600		
59	6700	7000	11500	10400		
60	6200	7700	8000	8100		
61	7100	7100	9200	9000	8400	
62	7200	8400	9100	9700	9250	
63	8400	8700	9300	8400		
64	7200	8700	8400	9700		
65	6500	7400	8400	9700	11700	10400
66	5700	9700	10520	9700		
67	6300	7700	9500	10600		
68	6000	8000	9500	11400		
69	6800	10700	9000	8100	7400	
70	7700	9000	9000	10400	10000	
71	8700	9000	9400	9700		
72	6500	7700	8400	7500		
73	8000	8700	8600	8700	8800	8400
74	7000	8700	9700	10800	9100	
75	7400	8400	9200	8700		
76	7800	8000	9700	10500	9000	8600
77	7400	8000	9500	8400		
78	7800	8400	9700	10400	9700	
79	7600	8400	9700	10800	8400	
80	7800	8400	9700	10800	8400	

POSTALIMENTARY LEUKOCYTE CURVES IN EIGHTY NORMAL PERSONS

The present series of experiments was conducted on eighty presumably healthy medical students. In each instance, the subject had his breakfast between 7 and 8 a. m., and thereafter fasted until 1 p. m. At this time a total white count was made, and then the subject drank one glass of milk. Thereafter, white counts were made at intervals of one-half hour. The complete result of these counts is given in Table 1.

The outstanding feature of Table 1 is the high degree of uniformity in the leukocyte curves. Of the eighty normal persons tested, not one failed to show a response in leukocytosis, in other words, the crisis hemoclasique, as judged by the leukocyte count, did not occur once.



The curves themselves were surprisingly similar in character.

Three curves are graphically represented in Chart 1. They are the two extremes, i. e., the minimal and the maximal degrees of leukocytosis observed in normal persons, and a composite curve, obtained by averaging the figures obtained in the entire series. It is believed that these curves can safely be considered to portray the average type of reaction and the permissible limits of variation in normal persons.

Chart 2—Postalimentary leukocyte curves in six patients showing the crisis hemoclasique. The time intervals are the same as in Chart 1. Case 1 bronchial asthma; Case 2 Laennec's cirrhosis; Case 3, cholelithiasis; Case 4 syphilis of liver, with ascites; Case 5 idiosyncrasy to milk; Case 6 Laennec's cirrhosis bronchitis.

The present study adds considerable justification to Widal's contention that postalimentary leukopenia is to be construed

as a pathologic phenomenon. It does not touch on the problem of the specific interpretation of abnormal curves, or upon the possible occurrence of postalimentary leukopenia in pathologic states other than hepatic insufficiency.

While the present work was not primarily intended to include a study of pathologic material, it may not be

TABLE 2—SIX CLINICAL CASES IN WHICH THE CRISIS HEMOCLASIQUE OCCURRED

Case	Clinical Diagnosis	Before Meal	After 200 Gm. of Milk			
			½ Hr	1 Hr	1½ Hr	2 Hr
1	Bronchial asthma	8000	8400	8000	7000	
2	Laennec's cirrhosis	4000	2500	2800	1600	
3	Cholelithiasis	10000	6000	5700	6000	
4	Syphilis of liver ascites	8000	7000	7000	6500	7400
5	Idiosyncrasy to milk, with nausea apparently due to test meal	1400	10400	8400		
6	Laennec's cirrhosis bronchitis	4000	10400	11000		

normal persons following the ingestion of one glass of milk after five hours of fasting, and, if the curves proved to be consistent to plot out a composite curve of normal alimentary leukocytosis, under the foregoing conditions furnished the subject for the present investigation.

amiss to mention several clinical examples in which the test was used and the crise hemoclasique resulted. Table 2 gives these cases, and the curves are graphically shown in Chart 2.

SUMMARY

The present study was undertaken for the purpose of investigating the normal leukocyte curve following the ingestion of one glass of milk after a period of fasting. Alimentary leukocytosis is the physiologic foundation on which Widal's test of liver function is built. While a decrescendo leukocyte curve is not the only element in the crise hemoclasique of Widal, the other components being a fall of blood pressure, increased coagulability of the blood, and a diminished refractive index of the serum, Widal expressed the opinion that a drop in the leukocyte curve is the most important part of the syndrome, and is sufficient basis for the diagnosis of hepatic inadequacy.

It therefore became essential to institute a careful inquiry into the physiologic results before attempting to interpret atypical curves. It was necessary to establish the fact that alimentary leukocytosis is uniform under normal conditions. To give a physiologic background on which to base pathologic studies, it appeared desirable to plot out a composite curve of normal alimentary leukocytosis, under the conditions of the test, together with the curves of the permissible limits of variation in normal persons.

Experiments with reference to their postalimentary leukocyte curves were conducted on eighty presumably healthy medical students. After five hours of fasting, a white cell count was made, then a glass of milk was ingested, and thereafter the leukocytes were counted at intervals of one-half hour. In every instance, some degree of leukocytosis followed the administration of the test meal, in other words, the crise hemoclasique, as judged by the postalimentary leukocyte curve, did not once occur in a normal person. There was considerable uniformity in the curves, and the difference between the two extreme variants (Chart 1) was not great.

The composite curve of normal postalimentary leukocytosis (Chart 1), as obtained by averaging the figures on the eighty normal subjects, gave counts of 7,379 white cells before the meal, and 8,856, 9,762, 9,779 and 9,191 white cells one-half hour, one hour, an hour and a half, and two hours, respectively, after the meal.

From the studies here reported, it appears safe to conclude that the normal response to the conditions of Widal's liver function test is uniformly one of leukocytosis.

616 Carlton Avenue

The Greatest Intellectual Revolution—We are in the midst of the greatest intellectual revolution that has ever overtaken mankind. Our whole conception of mind is undergoing a great change. We are beginning to understand its nature and as we find out more intelligence may be raised to a recognized dignity and effectiveness which it has never enjoyed before. An encouraging beginning has been made in the case of the natural sciences and a similar success may await the studies which have to do with the critical estimate of man's complicated nature. His fundamental impulses and resources the needless and fatal repressions which these have suffered through the ignorance of the past and the discovery of untried ways of enriching our existence and improving our relations with our fellow men.—Robinson
The Mind in the Making

DUODENAL MOTILITY

RADIOGRAPHIC OBSERVATIONS FOLLOWING THE DIRECT
INJECTION OF BARIUM INTO THE HUMAN
DUODENUM

HOMER WHEELON, M.S., M.D.

SEATTLE

Recent experimenters have shown that duodenal contents normally are regurgitated into the stomach toward the close of gastric digestion. This finding, together with the frequency with which reverse movements of barium are seen during radiographic examinations of the gastro-intestinal tract¹—partial duodenal obstruction—prompted the present direct study of movements in the human duodenum.

It is not my purpose in this paper to set forth evidence either for or against any particular theory pertaining to the physiology of the duodenum. However the results obtained by a specific method of duodenal injection will be presented and discussed in the light of modern theories. Whether or not the observations will be of use from a physiologic or clinical standpoint requires corroborative evidence, the amount of information to date is insufficient to warrant general conclusions.

METHOD

A small duodenal tube with a metallic tip is passed into the stomach, the contents of the stomach are withdrawn, and the patient is then permitted to recline on the right side until the bile flows from the tube. The presence of bile is taken as an indication of the presence of the tube in the duodenum. Following drainage of the duodenum, the patient is fluoroscoped and the position of the tube is determined. Then from 15 to 30 cc. of a barium mixture is injected through the tube into the duodenum. Injections are often repeated, some patients receiving as high as 180 cc. during the course of an examination. Tracings of the various positions of the barium are made on thin sheets of paper placed on the fluoroscope screen. These drawings, while less exact than roentgenograms, have the advantage of representing known conditions in the parts studied.

Disadvantages of the method are that (1) Material is normally delivered to the duodenum only after passage through the stomach, (2) the presence of the tube, a foreign object, may of itself excite atypical motility, (3) the distention of the duodenum at a given point may give rise to motor activities which, though interesting, perhaps, are not normal to that viscus. For these and other reasons, inferences as to normal duodenal motility will not be attempted.

The method possesses the advantage of an unobstructed view of the duodenum throughout its entire length. The removal of gastric contents may or may not be of advantage, nevertheless it removes the possibility of confusion because of the passage of material from the stomach into the duodenum.

1 The method here described has been of material service in determining obstruction by making possible the direct visualization of the duodenum throughout its entire course thereby obviating difficulties encountered following the usual radiographic methods. Quinn in an article (Chronic Duodenal Obstruction, New York, M. J. 116, 651 [Dec. 6] 19-22) which has appeared since the writing of this paper complains of the usual radiographic methods in these words: "The examination is sometimes difficult to conform to the third portion of the usually pooled and after it is filled with the duodenum in the anteroposterior view gives a better opportunity to visualize the duodenum throughout its entire course." The method here described has been of material service in determining obstruction by making possible the direct visualization of the duodenum throughout its entire course thereby obviating difficulties encountered following the usual radiographic methods.

In presenting the data and throughout the discussion, such terms as peristalsis and antiperistalsis will not be used for the reason that these terms are accepted as having specific physiologic meanings. Perhaps such terms might justly be applied to the observed phenomena of the study, but simple descriptive words will suffice for the present needs and will thus prevent unnecessary confusion and possibly just criticism.

RESULTS

Results will be considered under the headings of (1) immediate results of barium injection, (2) reverse passage of barium from the point of injection to the duodenal cap and stomach, (3) forward passage of barium, (4) "to and fro movements" of barium in a limited portion of the duodenum, (5) injection of the jejunum, and (6) duodenal retention.

IMMEDIATE RESULTS OF DUODENAL INJECTION

Slow injection of from 15 to 30 cc of a barium mixture into the duodenum gradually increased the size of the shadow at the point of delivery. The shadow,

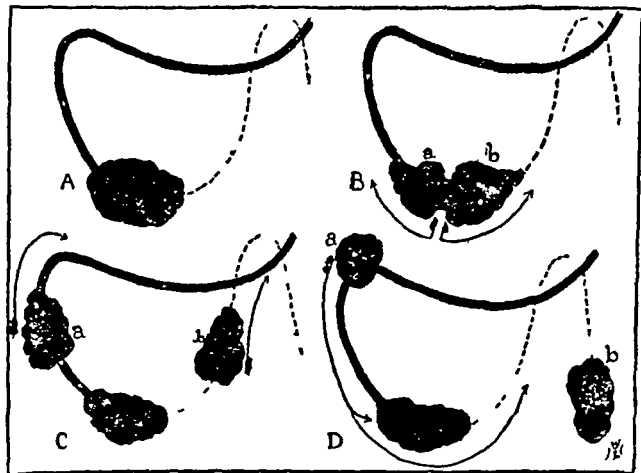


Fig. 1—Schematic representation of the usual movements of barium following its injection into the human duodenum. A local distention following injection. B barium mass being divided. C barium masses *a* and *b* passing from the point of injection *a* toward the pylorus, *b* toward the jejunum. D mass *a* resting in the cap region, *b* in the jejunum. The arrow from the cap region indicates the passage of barium from that region to the point of injection and to lower segments.

oval at first, gradually assumed an oblong shape as the injection continued. At the point of flattening of the oval mass the injection was discontinued, it being assumed that maximal lateral distention had occurred. Only sufficient barium was injected into the duodenum to cause moderate distention and present a bolus on which the duodenum might act.

In the majority of the cases the placement of barium within the duodenum was followed within a few seconds by constriction of the mass at the point of injection. This constriction resulted in the separation of two portions from the primary mass and their propulsion along both directions of the duodenum, the one portion passing toward the cap, the other toward the jejunum. Usually such movements did not completely empty the injected portion. This type of primary response was observed in seven of the thirteen cases included in this study (Fig. 1). A primary forward passage was observed in four cases. Reverse movements of barium occurred in two cases as the first motor response to duodenal injection. On several occasions, preceding the movements just described, the barium shadow was

partially divided and moved in opposite directions over short distances, from 2 to 3 cm., and later reunited at the point of division.

REVERSE MOVEMENTS IN THE DUODENUM

Barium was presented to the pylorus at some time during the examination of all the thirteen cases, and rested there for varying periods of time. In six cases, barium was passed from the point of injection into the stomach, in two of these cases, however, this occurred only after the injection of considerable quantities into the duodenum.

The injection of 15 cc of barium in Case 1, in which the tip of the duodenal tube lay within the cap, caused maximal distention. Barium did not pass into the stomach following this injection or at any time during the examination. The cap contained barium thirty minutes after the primary injection in spite of the fact that small amounts had been repeatedly withdrawn and delivered by progressive, forward waves to the jejunum (Fig. 2 A). Reverse movements of barium were not observed in any portion of the duodenum.

Maximal distention and motor activity did not occur in Case 2 until approximately 40 cc of barium had been injected into the duodenum. The first observed movement almost completely severed the mass and forced the two portions away from each other. The central portion was passed with considerable force toward the pylorus, and came to rest in the cap. At times the reverse movements of barium from the point of injection followed each other in rapid succession, forcing material in tumultuous masses into the cap region. So marked were these movements which piled material against the pylorus that it appeared as though that structure must give way to prevent serious consequences (Fig. 2 C). The pylorus, however, did not yield for a considerable time, then a small amount of barium was observed in the stomach. Reverse movements were observed in this case only in that portion of the duodenum cephalad to the tip of the tube.

Injection of the duodenum in Case 3, approximately 19 cm below the pylorus, was followed by nearly complete division of the mass. The proximal portion was delivered to the cap by one continuous, rapid movement, this portion came to rest in the cap long before the distal portion reached the ileum. From time to time, following the initial movement of barium along both directions of the duodenum, small portions were separated from the mass at the point of injection, and passed to the cap. Usually these reverse movements occurred after a series of deliveries from the cap to the point of injection. On several occasions there occurred rhythmic alternations in the forward and reverse passage of material along the descending portion of the duodenum.

Similar reverse movements of barium were observed in all of the cases save the one in which injection of the cap occurred. In three cases, marked reverse movements occurred in the terminal portion of the duodenum. In several instances, barium was passed toward the cap only after the injection of a considerable amount into the duodenum. Reverse movements in those cases were followed by forward movements, the result being that material passed toward the cap was immediately returned to lower segments.

That reverse movements of barium in the duodenum, as here described, are not entirely the result of the particular method employed is evidenced by the pres-

FORWARD MOVEMENTS OF BARIUM

(Fig 3) FORWARD MOVEMENTS OF BARIUM

Progressive, forward movements of barium, as observed in this study, began either at the point of duodenal injection or from the cap region after its filling by the reverse passage of barium from the point of injection. In brief, the passage of barium caudad from those two points was identical with the passage of barium through the duodenum of persons who had not received the duodenal tube. However, there was this difference. In the usual preparation, movements of barium began in the cap region and progressed along the duodenum, whereas, following direct duodenal injection, the first forward movement began at the point of injection, 7 point from 4 to 18 cm distal to the pylorus. Movements of barium were caudad only in Case 1, in which the tip of the duodenal tube rested in the cap. When the point of the tube lay distal to the cap, twelve cases, the first progressive, forward movement apparently began at the point of injection. Later, following reverse filling of the cap, progressive movements from that region delivered barium to the point of injection, at times through the region of injection to more distal positions (Fig 1). In certain instances—four cases—the first movement of barium following injection of the duodenum was a forward passage into the ileum, in other instances, barium was passed forward various distances and there retained until succeeding movements either carried it forward to the ileum or reverse movements delivered it back to the point of injection or to the cap.

There were not observed movements or positions which indicate that

movements delivered by injection or to the cap
I have not observed movements of barium from the cap which indicate that this region simply drops or is siphoned from this point. My observations to date on this point, briefly, are these. Material remains in the cap as a rounded mass for an appreciable period of time following its distention, either directly by injection or indirectly by the passage of material from the stomach or from the duodenum by reverse movements. The first indication of change in the mass is the widening of the distal conical portion. This widening increases as barium rushes through it to fill a portion of the proximal duodenum. At no time does this point of opening reach the diameter of the mass collected below the cap. Following the collection of material in the upper duodenum and apparently before the mass passes forward, its continuity with that in the cap is severed. The portion thus cut off is moved progressively forward.

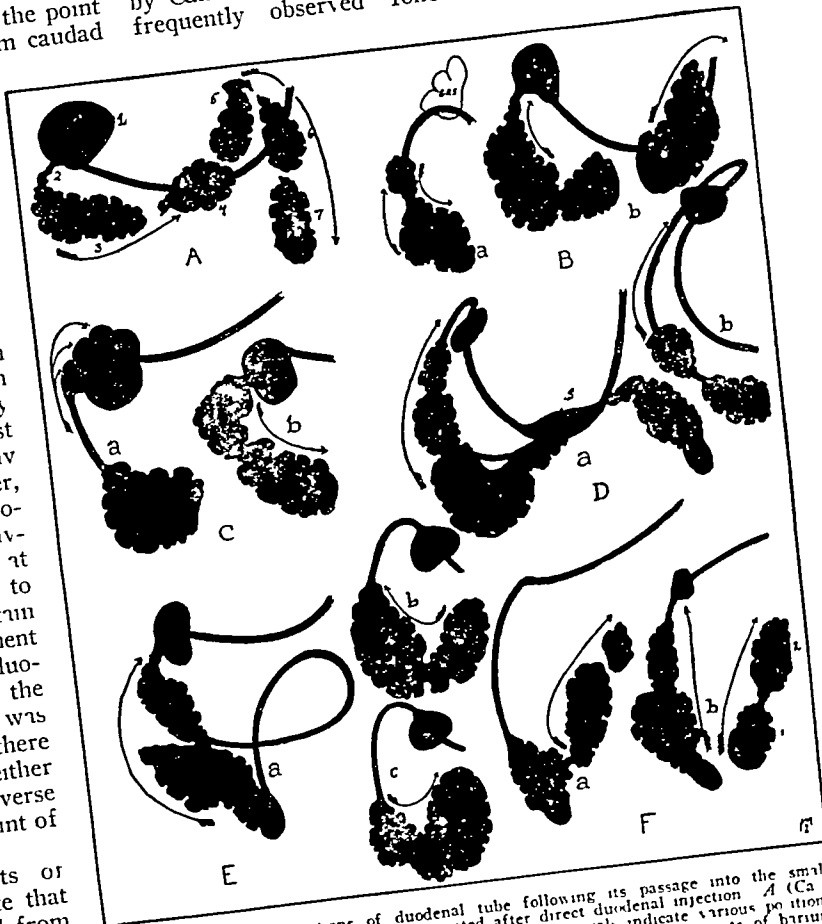
The present method of study gives no information pertaining to tone changes in the duodenum as affected by gastric motor activity, or evidence as to the origin

The present method of study gives no information pertaining to tone changes in the duodenum as affected by gastric motor activity, or evidence as to the origin

of waves which pass barium away from the point of duodenal injection and the cap region. The only information establishable is that distention of the duodenum usually is followed by division of the mass and its passage along both directions of the duodenum, also that the filling of the cap by reverse movements of barium from the point of injection is followed by the passage of material forward from that region.

"TO AND FRO MOVEMENTS" IN THE DUODENUM

Movements of barium resembling those described by Cannon² as rhythmic segmental contractions were frequently observed following duodenal injection

[illegible]

Similar movements were observed during regular radiographic examinations. Such movements were characterized by a more or less complete division of

barium mass at several points, this division throwing the barium into segments. Later these oval masses divided, causing the two portions to move in opposite directions to form a second series of oval masses, the central portions of which occupied the positions of previous constriction. Such movements did not carry material forward or backward save over very limited areas.

The injection of 20 c.c. of barium into the duodenum in Case 14 was followed by marked rhythmic "to and fro movements", the barium was repeatedly divided and redivided. In this case, however, the barium remained confined to the region of injection for possibly three minutes before material was passed along either direction of the duodenum (Fig 2 B). It may be of interest to state that a forward movement from the point of injection in this case was always accompanied by a simultaneous movement of barium toward the cap. On three occasions subsequent to such movements the examination had to be discontinued because of faintness and dizziness of the patient.³

The segmental type of movement was best observed in the region of duodenal injection and portions caudad. However, in Case 2 it appeared as though this type of motility was present in the descending limb of the duodenum. Here barium was being rapidly moved toward the pylorus, at the same time it appeared as though the barium, although progressing upward, was repeatedly divided into segments. Evidently the entire movement was not the result of simple division of the barium mass, for the end-result was engorgement of the cap and complete clearance, save for the presence of the tube, of the descending portion of the duodenum.

INJECTION OF THE JEJUNUM

In one patient, Case 3, the tip of the duodenal tube passed into the jejunum (Fig 2 D). Injections at this point were followed by passage of barium to the stomach and to the ileum. The details of the various movements observed need not be given, for they were similar in all respects to those already described.

DUODENAL RETENTION

More or less prolonged retention of barium at the point of duodenal injection occurred in all cases included in this study. Retention of barium in the cap, however, usually outlasted retention in other portions of the duodenum. For instance in Case 2, distention of the duodenum in the region of the inferior flexure resulted in the rapid accumulation of barium in the cap and the appearance of barium in the ileum. The patient was radiographed as quickly as possible after injection, and it was observed that the cap remained greatly distended while only a small amount of barium remained about the lower end of the duodenal tube. Barium was still in the cap, thirty minutes later.

The movements of barium which nearly emptied the duodenum and which were associated with faintness of the patient in Case 14 were not sufficient to evacuate the cap. In other instances the cap filled promptly and then, by a loss of small portions which were passed caudad, became completely emptied. The absence of barium from the cap was never of long duration while material remained in the duodenum, withdrawals from and presentations to the cap continued until such time as the forward movements of barium completely emptied the duodenum.

The fact that barium often remains in the cap for some time after complete gastric clearance is evidence that cap retention is not entirely due to the present method of investigation. Retention in the region of the inferior flexure of the duodenum is often observed during routine radiographic examinations. A degree of retention at this point comparable to that observed by the present method, however, would be looked on as

indicative of a pathologic condition.

Most often retention occurred in the loop formed at the inferior flexure or in that portion beyond the flexure and to the right of the vertebral column.

Whether or not the tendency to retention in the region of the inferior flexure is the result of the method employed, I am unable to say. Up to the present, attempts to inject the last portion of the duodenum have been unsuccessful (Fig 2 E). In the one instance of jejunal injection, barium was rapidly moved along the intestine in both directions, that portion sent cephalad came to rest in the inferior flexure, the cap and the stomach. It would seem from the present study that the mechanics of the duodenum is more responsible for the retention in the inferior flexure than the result of disturbed physiology. The average duodenum has its lowest point at the inferior flexure, the portion reaching the duodenojejunal flexure rises rather acutely. The condition is somewhat analogous to the mechanics of the water-trap stomach; material must be forcibly lifted against gravity from the lowest point. If such an explanation suffices, it is nevertheless difficult to understand the persistent retention in spite of the marked degree of activity of this region. There was

no evidence of duodenal obstruction in any of the cases studied. In the one instance of partial obstruction of the ileum—Meckel's diverticulum—there was the usual retention at the inferior flexure, although barium passed evenly through the duodenum and jejunum.

COMMENT

According to the works of Kussmaul⁴ and of Reh-fuss, Bergeim and Hawk,⁵ there is a flow of duodenal



Fig 3—Duodenal retention and reverse movements of barium in two patients following the drinking of a barium mixture. A (Case 17 Dec 1, 1922) a barium being passed from the region of the inferior flexure of the duodenum into the cap region during a quiescent phase of the antrum. b to and fro movements of barium in the duodenum during a positive phase of the antrum. The patient invariably complained of a crawling sensation whenever marked pendular or reverse movements occurred in the duodenum. B (Case 18 Nov 17, 1922) duodenal retention and reverse movements of barium as observed after the drinking of a barium mixture. The positions of retention and reverse movements of barium in these two cases are similar to those observed following duodenal injection (Fig 2).

⁴ Kussmaul A. Die peristaltische Unruhe des Magens, nebst Bemerkungen über Tiefstand und Erweiterung desselben, das Klatschgeräusch und Galle im Magen. Samml. klin. Vortr. (Volkmann's) 1880 pp 1637-1674, cited by Alvarez (Footnote 16).

⁵ Reh-fuss M E, Bergeim Olaf and Hawk P B. Gastro-Intestinal Studies. I. The Question of the Residue Found in the Empty Stomach. J. A. M. A. 63: 11-13 (July 4) 1914.

³ I hope to consider specifically in a subsequent publication the relation of duodenal motility to psychic states.

contents back into the stomach at the close of a meal or during starvation. It appears that this process may be accentuated by the taking of fats⁶ which, according to Cannon,⁷ impairs the tone and motility of the stomach. Possibly the fatty acids split off by the pancreatic juices stimulate the bowel.⁸

Numerous observations are on record showing that the injection of the duodenum through a duodenal fistula causes a retardation or cessation of gastric evacuation because of the high state of tonicity produced in the pylorus.⁹ Cannon² noted that distention of the colon with large enemas resulted in the passage of material into the small bowel. Heile,¹⁰ on the other hand, demonstrated that stimulation of the colon slowed the passage of material through the ileocolic sphincter—a condition similar to that observed in the stomach following the injection of material into the duodenum through a fistula. It is of common knowledge that rapid distention of the jejunum—jejunal feeding—often results in nausea, regurgitation and at times vomiting.¹¹ Also, it is common to find the ileum containing barium after the giving of a barium enema. According to Quimby,¹² such a procedure may result in the passage of material to the duodenum.

Cannon,¹³ Engelmann¹⁴ and Kretschmer¹⁵ have shown that stimulation of smooth muscle in a tubular organ results in a contracted tonic ring from which waves are given off in both directions.

According to Alvarez,¹⁶ the rhythmicity, irritability, reaction time and latent period of the gastro-intestinal tract are graded from the stomach—lesser curvature—to the anus the gradient theory. Raising the gradient in any portion of the intestine, according to this theory, results in the passage of waves in both directions from that point. As stated by this author,¹⁷ in referring to the closure of the pylorus and retardation of gastric evacuation following injection of the duodenum through a fistula: "It is not surprising that food put into the middle of the tract tends to go both ways." To explain the normal regurgitation of duodenal contents into the stomach at the close of gastric digestion, the theory assumes that "the tone of the stomach drops below that of the digesting bowel."

The results of the present study appear to offer considerable support to the gradient theory. As previously considered, duodenal injection, the stomach having previously been emptied, results in a constriction over the mass injected and the passage of material from that point along both directions of the duodenum. Apparently, therefore, distention of the duodenum in some way raises the tone (gradient) sufficiently high to excite motor activity, i. e., contracted tonic ring,

from which waves are given off in both directions. In my series of cases, the reverse movements completely filled the cap, at times, material was passed into the stomach. The tenacity with which barium remained in the cap was one of the most remarkable single observations of the present study.

On the basis of the gradient theory it must be assumed that the pyloric sphincter in my cases, immediately following duodenal injection, possessed a tone higher than the duodenum which forced barium against it. Perhaps, as suggested by Alvarez, the wave delivering barium to the cap region was preceded by a conduction wave which, because of the low threshold of irritability of the pylorus, excited it maximally prior to the arrival of the delivering wave. The festoon-like arrangement of the relatively few contractile fibers of the cap region may in part account for the degree of distention of this region and the inability of the active duodenal fibers to pass barium into the stomach. Perhaps, had the duodenum of my patients been more highly distended at the time of the primary injection, material might have been passed directly into the stomach in each case. However, it was deemed advisable to prevent overloading of the duodenum and the possibility of nausea and vomiting. The high initial tonicity of the pylorus evident in the majority of the patients ultimately gave way as material was delivered to the jejunum and ileum for, as previously mentioned, barium was observed in the stomach from twenty to forty minutes after the initial injection. This phenomenon, namely barium in the stomach following duodenal injection, may be in the main the result of similar activities which carry duodenal contents into the stomach at the close of a normal gastric digestive phase. In other words it might be assumed that the tone of the stomach had dropped below that of the more or less loaded small bowel.

The result of the present study shows that barium may be passed over a given segment of intestine in opposite directions. Distention of the cap by reverse movements in no instance prevented material from being passed from this region by progressive movements to the point from which it originally came, or to lower segments. Hence, it appears that the gradients can be altered rather rapidly in the duodenum. Perhaps distention of the cap beyond a certain point is sufficient to produce a gradient in the upper duodenum of greater magnitude than that at the point of primary injection, at any rate, barium continues to pass back and forth over the descending portion of the duodenum until finally the "down hill gradient" clears the viscus of contents.

Distention—placing a mass directly within the duodenum—is followed by a "tonic contraction" over the point of distention, and the passage of material in both directions of the viscus. However, in the series of observations this point of primary distention and motor response tends to remain more or less at least, it is the last portion of the duodenum, the cap, to become free of barium. As distention increases the gradient at this point it is the same region which is the first to clear the contents. This is previously stated. Possibly barium tends to remain in the cap region, because of the festoon-like arrangement of the contractile fibers of the cap. The mechanism of this may be at this point as material is delivered to the

6 Boldireff W. Die periodische Tätigkeit des Verdauungsapparates ausser der Verdauungszeit. *Zentralbl. f. Physiol.* 18: 489-493, 1904.

7 Cannon, W. B. The Acid Control of the Pylorus. *Am. J. Physiol.* 20: 283-322, 1907.

8 Bokai A. Experimentelle Beiträge zur Kenntniss der Darbewegungen. *Arch. f. exper. Path. u. Pharmacol.* 24: 153-166, 1887.

9 Lohmheim O. and Dreyfus G. L. Zur Physiologie und Pathologie der Nahrungverdauung. *Ztschr. f. phys. Chem.* 58: 50-83, 1908. Töbler L. Ueber die Eiweissverdauung im Magen. *Ztschr. f. Phys. Chem.* 45: 185-215, 1905. Baumstark R. Ueber Hervorrufung von Magenfunctionstörungen vom Darm aus. *Ztschr. f. phys. Chem.* 84: 437-450, 1913.

10 Heile B. Experimentelle Beobachtungen über die Resorption im Dünn- und Dickdarm. *Mitt. a. d. Grenzgeb. d. Med. u. Chir.* 14: 474-486, 1905.

11 Wegele C. Gross M. H. and Held I. W. *Therapeutics of the Gastro-Intestinal Tract*. New York: Rebman Company, 1913.

12 Quimby A. J. Roentgen Interpretation of Intestinal Conditions. *Am. J. Roentgenol.* 1: 399-403, 1914.

13 Cannon W. B. Further Observations on the Venteric Reflex. *Am. J. Physiol.* 23: 26-27, 1908.

14 Engelmann T. W. Zur Physiologie des Ureter. *Arch. f. d. ges. Physiol.* 2: 243-293, 1869.

15 Kretschmer H. L. The Retrograde Movement of Ureteral Cat. *Cult. J. A. M.* 71: 1355-1359 (Oct. 26) 1918.

16 Alvarez W. C. *The Mechanics of the Digestive Tract*. New York: Paul B. Hoeber, 1922.

17 Alvarez. *The Mechanics of the Digestive Tract*. p. 101.

ach often lags at the inferior flexure or leaves a portion of its mass after the forward wave has delivered material to the jejunum. It appears that the gradient does not become greatly reduced at the point of retention for the reason that it is from here that barium is passed toward the cap and jejunum. Hence, it may be tentatively assumed that a portion of the duodenum may show high degrees of activity and at the same time retain material for a considerable period of time—a condition somewhat similar to gastric retention and discharge. The present observations, however, lend no positive proof that the gradient is either raised or lowered at the point of retention. The observations simply show that material may continue to be passed from a region of distention along both directions of the duodenum without immediate clearance of the segment distended.

SUMMARY AND CONCLUSIONS

1 Barium in quantities of from 20 to 60 c c may be injected directly into the duodenum without causing distress, the stomach and duodenum having previously been emptied of their contents.

2 The first observed movement of the barium following injection into the duodenum is a more or less complete division of the mass at the point of greatest distention.

3 Following the primary partial division, barium is usually passed along both directions of the duodenum, the central portion being delivered to the upper duodenum or cap, the distal portion to the jejunum.

4 Reverse movements of barium sooner or later result in the complete filling of the cap, at which point barium may rest for a long period of time.

5 Following distention of the cap by reverse movements, barium is passed forward by progressive movements which, at times, carry material through the point of original duodenal distention to lower segments.

6 Barium may be delivered from the point of distention to the stomach as the result of reverse movements. In the majority of instances, barium is passed into the stomach only after several injections of the duodenum.

7 Rhythmic segmental and pendular movements of barium occur in the duodenum.

8 Barium tends to rest at the point of injection—inferior flexure. This region is the usual point of injection. In one instance of jejunum injection, marked reverse movements resulted in the lodgment of barium in the cap, stomach and inferior flexure.

Child Labor on Truck Farms—The migration of hundreds of families from Philadelphia and other Eastern cities for work on truck farms has a serious effect on the schooling of the children in these families, according to a survey made by the U. S. Department of Labor through the Children's Bureau. The findings of the survey show that 71 per cent of a large group of Philadelphia children who belonged to migratory families were retarded. Twenty-two per cent were from three to six years below normal grades. The attendance department of the Philadelphia schools estimates that over 2,500 children leave that city before the close of school each spring because of farm work undertaken by themselves or their parents. The migrations, which begin as early as February, reach their height at the strawberry season and the majority of children do not return to school till the last of October. Many working in the cranberry bogs, remain until later. The long absences in the autumn not only affect the child's progress in his studies according to the report but are probably conducive to truancy and to absence for other unlawful reasons.

Clinical Notes, Suggestions, and New Instruments

DIVERTICULUM OF BLADDER IN THE INGUINAL CANAL

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Diverticula may take their origin from any part of the urinary bladder, although by far the majority spring from the lateral walls, not far from the ureters. Their pathogenesis is still unknown. That some are congenital is evidenced by an analogous condition in fetal bladders, as shown by Watson.¹ However, it is generally believed that they are acquired secondary to some congenital defect in the bladder wall.

The possibility of encountering bladder tissue in the performance of inguinal hernia has been frequently stressed. In a fairly exhaustive review of the literature, I have failed to find a case report of a bladder diverticulum in the inguinal canal.

REPORT OF CASE

Mrs. S., aged 30, a sextipara, whose father was alive, and whose mother died of cancer at 37, had been suffering from so-called bilious attacks every six to eight weeks since childhood. The general habits were good, she urinated about seven times daily and twice at night. The menstrual history was normal.

For the last year the patient had noticed a mass in the right groin which she could reduce by manipulation and lying down. Three days previous to admission to the hospital, she was suddenly seized with severe pain in that region and was unable to reduce the swelling. Her physician, Dr. Maurice Exner, made a diagnosis of irreducible hernia, and admitted her to the Community Hospital, where I was consulted. She did not appear very acutely ill, although suffering from considerable pain. The temperature on admission was 100.6, pulse 96, respiration 18. The general physical examination was negative. In the right inguinal region a spherical swelling was present, tender, firm, irreducible and not tympanic. Urinary examination was negative. The diagnosis of an irreducible hernia seemed logical.

Under general anesthesia, the usual Bassini incision was done. Instead of a sac, a tumefaction presented itself, consisting of a firm, vascular, thick-walled, pear-shaped mass about 5 by 2 cm., lying in the inguinal canal, the narrowest portion at the internal ring. There was no peritoneal sac. The similarity to bladder tissue was noted, a catheter passed by the urethra and the bladder emptied. But the tumor in the inguinal canal remained unchanged in size. The mass was then incised and found to contain about half an ounce of straw-colored fluid. No internal communication with the bladder could be determined. The pedicle at the internal ring was transfixed and ligated with No. 2 chromic gut, and a typical Bassini closure done. The patient had a very smooth convalescence.

We were dealing, then, with either a congenital cyst of the inguinal canal, a bladder hernia, or a diverticulum of the bladder. Microscopic examination confirmed by several pathologists, proved the specimen to be bladder tissue. The muscle bands were arranged in the characteristic fashion, interspersed by connective tissue. There was, however, a complete absence of epithelium. Hinman, in a series of seventeen operative cases, states that in only one did he discover any vestige of lining epithelium. He mentions the remote possibility of traumatism during operation such as packing the cavity of the diverticulum, as being the factor in denuding the epithelium. This does not apply to the case here reported, as there was no intradiverticular manipulation. We feel that we were dealing with an old, if not congenital, diverticulum whose lumen had become shut off from that of the bladder and whose epithelium had undergone atrophy.

41 West Seventy-Fifth Street

1 Watson, E. M. The Developmental Basis for Certain Vesical Diverticula. J. A. M. A. 75: 1473-1474 (Nov. 27) 1920.
2 Hinman, Frank. Surg. Gynec. & Obst. 20: 150-172 (Aug.) 1919.

THE CELLULOID CAPSULE A MEANS OF DETERMINING
THE MOTILITY OF THE GASTRO
INTESTINAL TRACT

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The methods ordinarily adopted for the determination of the motility of the gastro-intestinal tract are

1 The ingested barium meal By following roentgenologically the progress of this radiopaque mixture, it is possible to determine, at any time, the exact position of the head and of the tail of the column of barium Unquestionably, this is the most accurate method we can employ for this purpose at the present time

2 The use of powdered charcoal or carmin This material is not radiopaque, and its progress cannot be followed fluoroscopically At best, only the terminal result can be noted, namely, the time of the appearance of the carmin or charcoal in the stool No information as to the intermediate progress is obtainable The method, however, in addition to giving us information as to the total gastro-intestinal motility, serves as a means of demarcation When it is desired to study the nature of the stool under special conditions or after a particular test diet, the demarcation made possible by ingested carmin or charcoal serves a valuable purpose It enables us to determine when to begin the study of the properly selected specimen of stool This could not be done as well with the ordinary ingested barium meal

The method here reported, though exceedingly simple, is nevertheless clinically valuable, not only for the demarcation of separate specimens of stool, but also for the determination of gastro-intestinal motility The method consists in the employment of the indigestible celluloid capsule, which I have previously described¹ This capsule is filled with powdered barium Because of this, its localization is possible fluoroscopically at any time in the course of its progress through the gastro-intestinal tract Moreover, the celluloid capsule itself may be prepared so that it is bright red Because of its color, the capsule can be readily detected in the stool This informs us as to the total gastro-intestinal motility, and also serves as a means of indicating when to begin the stool examination of a properly selected specimen after the administration of a test diet such as that of Adolph Schmidt, or of an ordinary meat-free diet for the detection of blood

1 West Eighty-Fifth Street

AN IMPROVED METHOD FOR COUNTING BLOOD
PLATELETS*H MAYNARD REES M.A. M.D. AND E. E. ECKER PH.D.
CLEVELAND

The essentials of a good method for platelet counting are (1) an efficient anticoagulant, (2) absence of contact between the undiluted blood and any instrument, (3) preservation and fixation of red blood corpuscles, (4) low specific gravity of diluting solution and (5) a dye that will readily stain the platelets To these five might be added a sixth in case the method is for clinical use, namely, that the solution must be reasonably easy to prepare, and must be stable The solutions recommended by Pratt,¹ Wright and Kinnicutt,² Buckman and Hallisey,³ Bizzozero⁴ (osmic acid anticoagulant, found unsatisfactory by Kemp, Calhoun and Harris⁵)

1 Buckstein Jacob Direct Determination of Lipase Within the Small Intestine J A M A 79 1766 (Nov 18) 1922
* From the Department of Pathology Western Reserve University School of Medicine

1 Pratt J H A Critical Study of the Various Methods Employed for Enumerating Blood Platelets J A M A 45 1999 (Dec 30) 1905
Kemp G F Calhoun Henrietta and Harris C E The Blood Plates Their Enumeration in Physiology and Pathology ibid 46 1092 (April 14) 1906

2 Wright J H and Kinnicutt Roger A New Method of Counting the Blood Platelets for Clinical Purposes J A M A 56 1457 (May 20) 1911

3 Buckman T E. and Hallisey J E Studies in the Properties of Blood Platelets J A M A 76 427 (Feb 12) 1921

4 Bizzozero Arch ital de biol 16 388 1891

5 Kemp G T Calhoun Henrietta and Harris C E The Blood Plates Their Enumeration in Physiology and Pathology, J A M A 46 1026 (April 7) 1906

were all found to present features that made satisfactory counts doubtful

After experimenting with the anticoagulants of the foregoing methods, we reached the conclusion that sodium citrate is by far the most efficient in preventing clumping of the platelets

The use of the blood pipet for a direct and true count is far easier than any of the indirect methods It has heretofore been open to the criticism that the platelets have the opportunity of adhering to the glass during the short period before the diluting fluid is drawn in We have obviated this by first filling the red cell counting pipet to the 0.5 mark with the diluting fluid and then drawing up the blood rapidly, until the top of the column reaches the 10 mark, whereupon the pipet is again plunged into the diluting fluid and the dilution is completed With a little practice this can be done very accurately In obtaining blood the puncture should be made sufficiently deep to cause the blood to flow freely for a few seconds The first drops are wiped away with a quick stroke

The method of Wright and Kinnicutt calls for laking of the red blood corpuscles Unfortunately we have never seen a field in which the red cells were laked without the formation of artefacts These artefacts appear as highly refractile bodies of the size of a small platelet and take the dye in the same manner They may appear attached to the periphery of the 'shadow' red cell or may be entirely free We have followed the formation of these bodies, and believe them to be identical with 'Arnold bodies' Our first solution was 38 per cent sodium citrate which although isotonic was found occasionally to permit of 'laking' or 'fading' of the erythrocytes After the addition of formaldehyd solution 0.2 per cent, this phenomenon was much less frequent, but it still occurred More formaldehyd caused distortion of the red cells

It is generally agreed that the time of settling of the platelets should be shortened as much as possible We found this to be particularly true when the open type Neubauer counting chamber was used since evaporation alters the preparation after about twenty minutes The high specific gravity of the solution of Buckman and Hallisey does not permit rapid settling of the platelets Experience with the solution which we have described has convinced us that a count of sufficient accuracy for clinical purposes may be made after ten minutes or about the time necessary for a preliminary red cell count

Of all the vital dyes tested, brilliant cresyl blue is the best Having made a solution as described below which was isotonic and contained formaldehyd we were inclined to attribute the occasional apparent hemolytic effect to the dye which we used in 0.1 per cent concentration With this in mind a series of tests were made as follows

Experiment showed that blood diluted 1:160 gives on centrifugalization a column of red cells that about half fills the narrow end of a Hopkins tube* Blood was diluted 1:80 with 38 per cent sodium citrate solution To 5 cubic centimeter portions of this were added 5 cc each of 0.2 per cent solutions of eight dyes also in citrate (38 per cent) The final mixture was blood, 1:160, sodium citrate, 38 per cent dye, 0.1 per cent This approximates the 1:200 dilution in the counting chamber The mixtures stood for periods from thirty minutes to two hours, and were then centrifuged with controls not containing dyes, for five minutes at same speed and time were maintained in all cases With the trypan dyes (red and blue) and cresyl bulk of precipitated cells considerably exceeded control tubes, but with all other dyes, methylene violet neutral red brilliant cresyl blue a bulk of cells was not altered There we assume that no important hemolysis takes place in the Hopkins tubes Parallel microscopic examination of the cases of increased volume Occasional and irregular cases Allowing the dye solutions to stand made no difference in our re-

* Hopkins J C A J A M A 60 1615

of isotonic salt solution for sodium citrate solution. Washing the red cells before making up the original suspension caused even greater swelling of the corpuscles in some instances, but no hemolysis took place as determined by the Hopkins tube method.

Having ruled out any direct hemolytic effect of the dye, of the anticoagulant or of age of the solution, we were forced to conclude that the phenomenon was in some way related to the intimate contact (surface effect) with glass, taking place in the counting chamber. The question was clarified by the work of Fenn,⁷ who found that hemolysis of washed corpuscles is more rapid when they are allowed to settle out on clean microscope slides than when they are kept in suspension, and that contact hemolysis is most marked on slightly soiled glass, hemolysis being very rapid with unfixed cells. Serum inhibited the contact effect. From the studies of Fenn and from our own, it is evident that, when using solutions for blood counting containing no fixative or only small amounts, the greatest attention must be paid to the use of scrupulously clean apparatus.

SUMMARY

The fluid recommended is a 38 per cent sodium citrate solution, to which formaldehyd solution, 0.2 per cent, and 0.1 per cent brilliant cresyl blue are added.

This diluting fluid is drawn in the blood pipet to the 0.5 mark, the freely flowing blood is drawn to the 1.0 mark and finally the pipet is plunged back into the diluting fluid, and dilution is completed.

After the counting chamber is filled, ten minutes should elapse before the platelet count is made. During this period, a red cell count can be readily accomplished.

Great care should be taken to use scrupulously clean pipets and counting chamber to avoid contact hemolysis.

Both in experimental work with the blood of rabbits and of guinea-pigs, and in clinical work, the method proved simple and reliable.

CASE OF GANGRENE OF SCROTUM AND PENIS

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A white man, aged 34, entered the hospital, Nov. 27, 1922, complaining of severe pain in the region of the scrotum and penis. The family history was negative. The past history included the diseases of childhood, and influenza in 1918, but no other serious illness. Owing to inability to retract the foreskin, the patient, on the advice of a physician, was circumcised at the physician's office, November 21. There were no untoward symptoms until two days later, when a slight infection developed, for which he applied a strong solution of mercuric chlorid. The next day he noticed that the skin on the penis and scrotum was dead, sensation was lost, and the wound was reddened. He continued to get worse and noticed that the skin was sloughing on both penis and scrotum. The latter had swollen to several times the normal size. He was brought to the hospital. All the skin, dartos and tunica vaginalis of the scrotum were gangrenous as high as the penoscrotal junction, and the skin on the anterior surface of the penis had sloughed. The skin of the thigh was intact as were the testes.

The patient was well developed and nourished. He was in much pain. The mucous membranes were pale and cyanotic. There was an anxious expression on the face. Examination of the head, lungs, and heart was negative. The abdomen was somewhat tender all over the lower quadrant, but there were no areas of tenderness on palpation. The blood pressure was systolic, 134, diastolic, 74, pulse pressure 60. Blood count revealed 12,000 leukocytes, 80 per cent polymorphonuclears, and 4,500,000 red cells. The urine was normal. The Wassermann and Sachs-Georgi tests were negative. A smear made from the lower wound revealed *Streptococcus pyogenes*.

All of the dead skin was carefully removed from the wounds and a wet dressing of potassium permanganate solu-

tion was applied until the infection had cleared up. The improvement was rapid, and on November 12 a plastic operation was decided on, with skin graft if necessary. Under spinal anesthesia, the edges of the scrotal wound were freshened and undermined slightly, beginning at the lower angle of the wound. An attempt was made to cover the testes with healthy skin flaps, which was done with the exception of a small area in the center, on which were placed several small skin grafts. The skin on the penis was so widely separated that it was not possible to approximate the edges, so a skin graft was done, and a rubber tissue dressing was applied. The scrotal wound healed by first intention with the exception of a small area near the center, but the grafts soon covered it. The penile wound healed very rapidly, and the patient was discharged, December 27, the wound to be dressed at home, only a small area requiring any attention.

This is rather an unusual case, in that the skin on both the penis and the scrotum was destroyed and sloughed without any damage being done to the surrounding skin, showing that it was doubtless a case of thrombosis of the vessels supplying the genitals, the testes being unharmed.

THE USE OF SILVER ARSPHENAMIN IN THE TREATMENT OF WASSERMANN FAST SYPHILIS

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Many articles regarding the efficiency of silver arsphenamin have appeared in the literature since Kolle,¹ in 1918, published the first of his series of reports. This much is established: it is an efficient spirocheticide, it is reasonably free from reactions, and it can be as conveniently administered as any other arsenical preparation.

The twenty-one cases reported were Wassermann fast. The patients, previous to the administration of the silver preparation, had had from four to thirty-four injections of arsphenamin and from thirteen to sixty-seven intramuscular injections of an insoluble mercury salt. The presence of a persistently positive Wassermann reaction in cases of intensive treatment is conceivably due to the continued activity of nests or foci of spirochetes resistant to medication. These foci are usually present in the cardiovascular and nervous systems. Detailed reexamination of these patients revealed evidence of activity that was unsuspected before treatment was instituted. These data are presented in Table 1. Stokes has repeatedly called attention to the multiple structural involvement in the various types of syphilis, and has exposed the fallacy of labeling a case neurosyphilis, for example, when an aneurysm and a hepatitis coexist.

TABLE 1—TWENTY-ONE CASES OF WASSERMANN-FAST SYPHILIS SHOWING MULTIPLE TISSUE INVOLVEMENT

Osseous system	19
General glandular and splenic	17
Cardiovascular	13
Skin and mucous membrane	11
Cerebrospinal axis	10
Gastro-intestinal	4

MODE OF ADMINISTRATION

A blood Wassermann test was made on all patients before the administration of silver arsphenamin.

From four to sixteen injections of 0.3 gm. of the drug in concentrated solution (10 cc.) were given at weekly intervals. No mercury was exhibited during the course.

At the end of the series of injections a month's rest was given and a complement fixation test was performed, together with a spinal fluid examination.

RESULTS

Twelve of the twenty-one patients presented a negative serum reaction. Four showed no change, and in five, a

¹ Kolle, W. Deut. ch. med. Wchnschr. 44: 1177 (Oct. 24) 1918 (Oct. 31) 1918.

marked diminution in the strength of the reaction took place. No severe reactions occurred, although treatment was stopped in Case 11 because of a threatened dermatitis (toxic type). Clinical improvement was seen in nearly every case, especially when the complaint or symptom was of neurologic origin. This seemed to parallel the spinal fluid findings.

Of interest is Case 8, in which the condition was conjugal syphilis. The wife was also Wassermann fast, but responded to therapy with a negative reaction (Case 2). The husband's blood reaction was unchanged, but he was so much improved clinically that he was able to resume his occupation as a brakeman.

Case 15 was accepted for trial with misgivings, since a total of thirty-four arsphenamin and sixty-seven mercury injections had been given. No signs of arsenical intolerance appeared, and the full course of silver arsphenamin was administered, with the result that the reaction changed from total inhibition to negative.

Cases 16 and 8 did not respond although the number of injections was double.

TABLE 2—RESULTS OF SILVER ARSPHENAMIN INJECTIONS*

Case	No of Mercuric Injections	No of Arsphenamin Injections	Serum Wassermann Reaction	Spinal Fluid Reaction	No of Silver Arsphenamin Injections	Serum Reaction After Therapy	S F Reaction 0.5 C c After Therapy	Outstanding Features
1	18	6	3		8	0		Cutaneous
2	26	16	4	3	8	0	0	Cerebrospinal
3	14	10	3		8	1		Ossseous
4	17	4	4	2	8	0	0	Gumma of the brain (?)
5	45	7	4	4	8	0	2	Cerebrospinal
6	47	6	4	3	8	0	0	Cerebrospinal and aneurysm
7	23	10	3		8	1		Latent
8	20	18	4		16	4		Aortitis
9	36	17	4		8	4		Cirrhosis
10	12	8	4	3	8	2		Cerebrospinal
11	27	14	4	4	8	2	0	Tabes dorsalis
12	24	6	3		8	0	0	Ossseous
13	45	12	2		4	0		Toxic dermatitis (?)
14	56	14	4		8	4	0	Visceral
15	67	34	2	3	8	0		Paresis
16	20	6	4	0	16	4		Myocarditis
17	14	4	4	0	4	0	0	Poor tolerance
18	16	18	3	0	8	1		Cutaneous
19	60	24	4	3	8	0		Cerebrospinal
20	40	20	4	0	8	0	0	Cutaneous
21	31	12	3	0	8	0	0	Early tabes

* All Wassermann reactions were performed with alcoholic antigen. 0 indicates a negative reaction.

The results obtained are of importance if it is believed that a persistently positive Wassermann reaction is indicative of activity. It is my impression that, by the introduction of a distinct change in the treatment of Wassermann-fast cases, lasting good will be done the individual. I have twice seen a strongly positive reaction disappear after a prolonged absence of medication. It is of course, impossible to estimate the permanence of the negative reactions obtained, but in two instances four and six months after the treatment, the test was still negative.

Clinic Building

Tuberculosis in New York in 1922—The New York Tuberculosis Association reports that tuberculosis claimed 5794 victims in New York City during 1922, the death rate being 99 per hundred thousand of the population. It is the first time in the history of the city that a tuberculosis death rate below 100 has been reached. In 1921 the mortality rate was 103. Up to 1919 the annual number of deaths from tuberculosis in all forms was constantly close to or slightly above 10,000. The great gain in the last few years is better realized when it is noted that the annual total now maintained is below 6,000, while since 1910 the population has increased by well over a million people. If the mortality from tuberculosis in 1910 which was then at the rate of 240 to 100,000 inhabitants had prevailed last year the deaths registered would have numbered 12,263. The saving of lives during 1922 due to progress against the disease, therefore amounted in this city to 6,469.

Special Article

THE CARE AND FEEDING OF INFANTS

(Continued from page 553)

[NOTE.—This is the ninth of a series of articles on the care and feeding of infants. It is addressed to the general practitioner rather than to the pediatric specialist. When completed the series, somewhat elaborated, will be reprinted in book form.—Ed.]

CLINICAL ASPECTS OF INFANT FEEDING

The general well-being of the infant is as important as the percentage and energy value of the food formula. In considering the two important factors in successful feeding, the chemical composition is as essential as the caloric value. Otherwise one encounters profound disturbances, difficult of interpretation, and due to feeding of either insufficient or excessive amounts of the components of the diet.

The infant, therefore, must be fed amounts of fat, protein, carbohydrates, salts and water suitable to its constitution, age and physical development, these ingredients must be in proper proportion and sufficient in quantity to meet the caloric requirements of the young tissues for growth and development. The fact also must not be overlooked that the constituents of the diet must be in such form as will allow of normal digestion and assimilation.

The wide range of tolerance of infants to their food has been mentioned, and that this, probably, largely accounts for the fact that so many pediatricians have successfully fed infants on mixtures which varied greatly both quantitatively and qualitatively. In all probability another factor is important in the explanation of these successes, namely, the fact that to a certain extent fats, carbohydrates and proteins are interchangeable in the metabolic functions.

The Weight Curve—In constructing a diet for infants, the individual needs must always be borne in mind. Allowance must therefore be made for basal metabolism, for growth, for muscular activity, and for the food values lost in the excreta (Holt). Indirect evidence as to the child's progress is best obtained by taking a careful history of its illnesses and feeding history. Direct evidence is best obtained by a careful study of the infant's physical development and weight curve. One soon learns that a study of the infant's weight is one of the simplest and most reliable clinical factors in estimating its progress. While infants vary considerably in their reaction to a given diet, according to their birth weight, subsequent care and previous diet, definite information of inestimable value is to be gained through the regular use of the scale.

For practical purposes it is necessary that we know the average gain to be expected in normal artificially fed infants. It should be remembered that the breast-fed infant will average larger gains than the bottle-fed baby during the first six or eight months of life. For comparative purposes in the estimation of overweight and underweight in infants coming under observation the following may be taken as working averages. For accuracy, a balance scale is necessary, the ordinary dial scale is unreliable.

The average weight at birth is 7 pounds (3,200 gm, or about 3,333 gm).

The average initial loss is 10 ounces (300 gm) or about one tenth of the body weight.

The birth weight is regained usually by the fourteenth day

The weight is doubled at the end of the fifth month, and trebled at the end of the first year

The average weekly gain during the first five months should approximate 5 ounces (150 gm), during the remainder of the first year, 4 ounces (120 gm)

The yearly gain during the second year is 6 pounds (2,727 gm)

The gain during the third year is 4½ pounds (2,000 gm)

The gain from the fourth to the eighth year is 4 pounds annually (1,800 gm)

The gain from the eighth to the eleventh year is 6 pounds annually (2,700 gm)

It is not sufficient, however, to base the determination of the amount of food on the weight of the baby alone, since two infants of the same weight may have decidedly different nutritional requirements. The fat baby requires less food per pound than the thin baby, and the overfed less than the underfed infant, the sick baby must of necessity be fed within its limits of tolerance during the acute stage of its illness. The body losses must also be compensated for during convalescence, as the baby's tolerance for food permits, by increases in the diet beyond the normal feedings per pound of body weight.

Within certain limitations, therefore, a healthy infant should show a regular gain. It is not absolutely necessary that an infant add to its body weight every day, as daily irregularities are the rule rather than the exception. The relation of the time of weighing to feeding, defecation and urination must always be taken into consideration, and under normal conditions it is sufficient to *weigh the infant once a week*. It is especially wise to impress this on a nervous mother.

Further, we must not forget that the weight curve of the nursing infant and that of the artificially fed infant differ widely, so that they cannot be directly compared. Although in the beginning the artificially fed infant gains less than the breast fed, in the course of a year he reaches the same weight. The latter at first shows larger gains, but later lags somewhat. Much more important than the weight itself is that the successive weight figures shall form a rising series.

Caloric Needs—Having determined the infant's weight and obtained a fairly definite idea as to its general physical condition, its caloric needs should be estimated so as to gain an idea of its total dietetic needs. The estimation must of necessity be based on its existent weight curve, duly considering its general condition and its weight as compared with other infants of the same age. One should think not so much of providing a given number of heat units as of the food elements necessary to furnish those units. Each gram of fat in the diet will furnish 9.3 calories, and each gram of protein and carbohydrates, 4.1 calories.

Under this system the physician reckons the minimum daily caloric requirement, either from the present weight of the baby or what it should weigh in health, and then selects the food, so proportioning the fat, carbohydrate and protein content that it will not only meet the caloric requirements, but also will contain the proper amount in grams, of each of the constituents, to meet the infant's needs for growth and development.

In considering the caloric content, the part played by the various food components must be remembered. Benedict and Talbot³⁶ found that the basal require-

ments are highest per kilogram at about the ninth month, and steadily fall from this time up to adult life. Holt and Fales³⁶ estimated that the food value normally lost in the excreta is a nearly uniform proportion of the intake, about 10 per cent for all ages after infancy, and that the requirements for growth are greatest during the first year of life, and during adolescence, also that the requirement for activity is the only factor which varies widely with different individuals. As the emaciated infant is expected to gain more rapidly in proportion to its body weight than the fat and well nourished infant, it will of necessity require a food with a higher energy quotient to maintain its growth ratio.

The sick baby will rarely be able to digest an amount covering its full needs, as estimated by its body weight.

TABLE 8—CALORIC NEEDS

Average infants under 2 months of age	from 30 to 45 calories per pound (from 65 to 100 per kilogram)
Average infants over 2 months of age	from 45 to 55 calories per pound (from 100 to 120 per kilogram)
Premature and thin infants under 2 months of age	from 50 to 65 calories per pound (from 110 to 140 per kilogram)
Thin infants older than 2 months	depending on their general condition from 55 to 70 calories per pound (from 120 to 150 per kilogram)

Therefore, as in every other phase of infant feeding, individual consideration is necessary. It must be remembered that the nutrition of the baby depends on the quantity of food *assimilated*, and not on the quantity *ingested*. Less food is absorbed and utilized by the infant with deficient digestive power, and overfeeding will retard its progress. A comparative estimate of the infant's diet, with a theoretical minimum, is of special value in cases in which doubt exists as to whether the retarded progress is due to insufficient food or to defective digestion and assimilation.

TABLE 9—CALORIC VALUES OF ONE OUNCE (THIRTY GRAMS) OF VARIOUS FOODS

	Calories
Cow's milk	21
Human milk	21
Cream (16 per cent)	54
Skim milk	11
Buttermilk	11
Buttermilk mixture	21
Albumin milk	12
Chymogen milk	21
Keller's malt soup	25
Cane sugar (by weight)	120
Maltose dextrin compounds (average)	110
Malt soup extract dry by weight	90
Malt soup extract dry by volume	132
Corn syrup by weight	80
Corn syrup by volume	110
Flour by weight	100
Cereal waters (1 ounce of cereal to the quart)	3

Repeated clinical experience proves that the earlier figures of Heubner and Rubner are too low for the average infant on bottle feedings. They estimated that the average healthy infant requires on the average 100 calories per kilogram of body weight during the first six months of life, and from six months to the end of the first year approximately 85 calories per kilogram, and that 70 calories per kilogram of body weight is the energy quotient on which a baby can maintain a weight equilibrium. Instead of lessened caloric needs toward the end of the first years, his increasing activities

³⁶ Benedict F. G. *Biochem. J.* 181: 107 (July 31) 1919

³⁶ Holt L. E. and Fales H. L. *Food Requirements of Children*. Total Caloric Requirements. *Am. J. Dis. Child.* 21: 1 (Jan.) 1921

demand heightening rather than lowering his food intake. Clinical observation in a large number of cases leads to the conclusion that, to assure satisfactory gain, the figures given in Table 8 must be approximated in the artificial feeding of infants.

During the first few weeks of life of the artificially fed infant it is usually difficult to approximate these figures.

Increases in the quantity of food should always be gradual, especially when malnutrition is present, and the infant must be carefully observed and increases made only as the food tolerance permits.

Estimation of the caloric content of the food is *not a feeding method*, and should be used only as a check on overfeeding and underfeeding, the scale, stools, general condition, and particularly the disposition of the infant being the ultimate guide for dietetic changes.

The *energy quotient* is the number of calories which the infant is getting per pound or per kilogram of body weight. To determine the energy quotient of the diet, the number of ounces of each food ingredient of the food mixture is multiplied by their caloric values, the products are added, and the sum is divided by the number of pounds or kilograms of the baby's weight.

ESTIMATING THE AMOUNTS OF THE INDIVIDUAL FOOD ELEMENTS

Protein—Holt and Fales³⁷ found in their investigations that the protein intake of the normal nursing infant is very low, ranging during the first nine months of life approximately from 8 to 12 gm daily. This is equivalent to about 1.5 gm per kilogram (0.7 gm per pound). Up to the age of 8 or 9 months the protein taken by the nursing infant seldom exceeded 12 gm daily. Our own observations indicate that most breast-fed infants will average a daily protein intake of 2 gm per kilogram.

When cow's milk is substituted for human milk the protein intake is considerably increased—doubled or even at times trebled. Infants from 1 month to 9 months of age receive from 15 to 30 gm of protein daily when fed on the usual modifications of cow's milk. This represents fully 3 gm and often 4 gm protein per kilogram (from 1.4 to 1.8 gm per pound). The increase in protein requirement when cow's milk is substituted for mother's milk is probably due to the difference between the two milks in amino-acid content. Mother's milk contains about twice as much lactalbumin (1.23 per cent) as does cow's milk (0.53 per cent). The lactalbumin, which forms two thirds of the protein of mother's milk, contains the highest proportions of the amino-acids leucine, lysine and tryptophan, of all the protein bodies. The work of Osborne and Mendel,³⁸ as well as that of others, has shown that lactalbumin is especially efficient in promoting growth, while casein, which forms one third of the protein of human milk (0.59 per cent) and five sixths of the protein of cow's milk (3.02 per cent) is of comparatively low grade as a growth protein. The chief demands for protein are for compensation for wear and tear and to provide for growth.

Holt and Fales found also that healthy children in their usual diet take about 4 gm of protein per kilogram at the age of 1 year, the amount diminishing to about 2.5 gm per kilogram at the age of 6 years. The

young infant, as compared with the older child, requires proportionately a larger amount of protein to meet his needs for maintenance and growth. The total protein intake in the diet of infants and young children, per pound or kilogram of body weight, however, does not differ greatly in amount because the infant receives virtually all of his supply in the form of animal protein during his first year, the vegetable protein being represented by the small amount received in cereals and vegetables.

Vegetable proteins as a class are of distinctly lower grades than animal proteins. While they may be adequate for maintenance it is hazardous with our present knowledge to depend on them for growth. Holt found that most of the children beyond the age of infancy took more than 60 per cent of their total protein in the form of animal protein, from milk, eggs, meat, etc. The average was 66 per cent of the total proteins from animal sources and 34 per cent from vegetable sources. As vegetable protein cannot replace animal protein gram for gram, he believes that even if a larger proportion of vegetable protein than the usual one third of the total requirements is fed, the total protein intake must be considerably increased.

Sugars and starches, when added to a diet sufficient to meet any infant's need, will, temporarily at least, cause a greater nitrogen retention. Fats have little or no influence. Nitrogen, to be retained, must be built up into living protoplasm, and to accomplish this salts must be available. Unless they are present the nitrogen is again excreted. Approximately 1.7 gm of ash are retained for each 1 gm of nitrogen (Howland), or 0.3 gm of ash for each 1 gm of protein.

The healthy, normal infant may be fed a minimum of 1½ ounces of milk to a pound (100 cc per kilogram) of body weight which would represent 1.5 gm of protein per pound of body weight (3.5 gm per kilogram).

Notwithstanding what has been said on theoretical and experimental studies of the protein needs of the artificially fed infant, as compared with the amount of protein received by the breast-fed infant, it must be granted that the proteins of cow's milk cover the protein needs of the infant, and that when in excess they rarely cause nutritional disturbances if the tendency to large curd formation is prevented by boiling or alkalinizing the milk.

As a working minimum, the protein contained in 1½ ounces of milk per pound (100 cc per kilogram) of body weight of the normal infant may be used, and in the underfed this quantity may be increased to an amount equal to 2 or 2½ ounces per pound, thereby approximating 1½ ounces per pound of what the baby should weigh for his age. Increases of milk in the diet must be gradual, the additions being governed by the child's ability to handle the food. From what has been stated, it may be inferred that it is wise to establish the protein content in a diet which may then be supplemented by fats, carbohydrates and salts because protein is the tissue builder and must necessarily be a basic constituent of all diets.

Fats—These are necessary to the normal growth and nutrition of the human body. But to a greater extent than the other food elements, they can for a time be replaced by proteins and sugars, more especially the latter. This explains why infants fed on low fat mixtures, more especially proprietary foods, such as condensed milk, will continue to gain in weight. However, such development cannot be considered as normal.

³⁷ Holt, L. E. and Fales, H. L. Food Requirements of Children. Protein Requirement. *Am. J. Dis. Child.* **22**: 371 (Oct.) 1921.
³⁸ Osborne, T. B. and Mendel, L. B. *J. Biol. Chem.* **25**: 1 1916.
ibid. **37**: 223 1919.

because the diet, besides being low in fat, rarely contains more than 1 per cent of protein

Fats furnish part of the heat energy necessary to maintain the body temperature. They are stored as a reserve food. The fat is a protein saver, and when supplied in proper amount but little protein is used for the production of animal heat, thus allowing the protein to be retained in greater amount for building the body tissues.

Fat is the carrier of the fat-soluble vitamins which are essential to normal growth, and in all probability have a direct relation to mineral metabolism. Fat also has a definite relation to calcium and probably magnesium metabolism independent of that due to its vitamin content. The best results in feeding are obtained when there is a definite relation between the fat and salt intake. Infants receiving an insufficient amount of fat in their diet show an increasing tendency to local and general infection, thereby giving evidence of lowered immunity.

Some infants digest fats badly, and when a fat intolerance is once established it is overcome only with great difficulty. In such cases it is necessary to throw on the carbohydrate the burden of furnishing the necessary extra food. Such a catastrophe should be avoided, as infants receiving an insufficient amount of fat rarely thrive satisfactorily. We should therefore aim to stay within safe limits. When the diet contains an insufficient quantity of fat, a high percentage carbohydrate feeding is usually instituted. This prevents the formation of soap stools, and tends to the development of diarrhea. For the formation of soap stools it is necessary that there be no excess of carbohydrate, and that there be present in the diet a relative excess of protein or fats or both. The resulting change in the chemical content of the bowel also has a decided influence on the bacterial flora in that the fat excreted in the intestinal tract combines with alkalis, which tend to overcome an excessively acid intestinal content.

Holt, in his studies, found that the nursing infant usually receives, during its first weeks, as much as 20 gm of fat daily, and that the total increases by the seventh month up to an average of 40 gm daily, the latter representing about 4 gm per kilogram (18 gm per pound) of body weight. Each gram of fat has an energy value of 9.3 calories, while protein and carbohydrate each furnishes 4.1 calories per gram, therefore, each gram of fat provides for more than twice as many calories. The tendency toward normal growth and development on the part of a nursing infant on a high fat feeding illustrates the value of this element in the diet.

Our clinical experience has demonstrated that while the tolerance for the fat of cow's milk varies greatly in different individuals, most infants will digest and assimilate 1.8 of fat per pound of body weight daily. This is the quantity contained in 1½ ounces of average cow's milk of good quality (4 gm per kilogram, the amount contained in 100 c c). This quantity will also supply the body needs for growth and development when associated with sufficient protein and carbohydrate.

Carbohydrates—These are used chiefly to supply heat and energy, to supply in part material for fat foundation, thereby partly replacing the fat waste. Because of their high caloric value, they supply a large amount of energy. They are efficient spacers of protein and will supply energy in case of fat insufficiency in the diet. Synthetically, they are converted into

glycogen in the body. Fat is formed from sugar by the subcutaneous cells, which are especially adapted to this function.

Normally, in greater part, sugar is absorbed from the small intestine and is not found in the feces. If absorbed in sufficient quantity it will cause a rapid increase in weight. When insufficient carbohydrate is supplied to the body, it supplies the deficiency by breaking down the body protein.

The majority of infants have a high carbohydrate tolerance, and the same is true of most infants suffering from nutritional disturbances. Exceptions to this are seen in some of the fermentative diarrheas, some eczemas, and exceptionally in a few other conditions. Fortunately, the ability to metabolize carbohydrates is often present even though fats and proteins are poorly digested.

For practical purposes, the carbohydrates used in infant feeding may be divided into three large groups: (1) the disaccharids, of which saccharose (cane sugar), lactose (milk sugar) and maltose are the best examples, (2) the polysaccharids, of which the cereals, flours and dextrin are most commonly used, and (3) mixtures of the disaccharids and polysaccharids, combinations of which are contained in most of the proprietary infant foods.

Cane and Milk Sugars—As regards the relative nutritive value of cane sugar and milk sugar, there is little to recommend one over the other so far as their food value and the limit of tolerance are concerned. When large quantities of lactose are fed, a laxative effect is more frequently seen than with cane sugar. Feeding of similar quantities by weight. Cane sugar is heavier than lactose, two tablespoonfuls of the former and three of the latter approximate 1 ounce by weight. *Cane sugar will answer the needs of most infants.* This assertion is based on a large experience with infant-welfare patients among whom economy, of necessity, had to be considered.

The total carbohydrates (sugar contained in the milk, sugar added to the milk, and cereal, if used), should average from one-eighth to one-fifth ounce (4 to 6 gm) per pound (from 9 to 13 per kilogram) of body weight a day. One and one-half ounces of milk, averaging 4.5 per cent carbohydrate, furnishes 2 gm of lactose. Normal full-weight infants will usually require a minimum addition of one-tenth ounce (3 gm) by weight of sugar to the milk mixtures for each pound of body weight (6.6 gm per kilogram). For underweight infants the amount should at first be calculated on the basis of their present weight, but increased if well taken, to meet the amounts indicated for a full-weight infant of similar age.

Carbohydrates needed beyond that furnished by 1½ ounces of sugar should be supplied by well cooked cereals or cereal waters, because of the danger of fermentative diarrhea. (See mixed feeding.)

Holt and Fales,³⁹ in their investigations on nursing infants, found that they took, on the average, about 12 gm of carbohydrate per kilogram of body weight daily. Artificially fed infants usually received somewhat more than this. They believe that an infant of average activity should at one year be allowed about 12 gm of carbohydrate per kilogram of body weight, the amount being decreased to about 10 gm per kilogram at 6 years, and maintained at this value throughout the remainder of the growth period.

³⁹ Holt L. E. and Fales H. L. The Food Requirements of Children. Carbohydrate Requirement. *Am J Dis Child* 24:44 (July) 1922.

The sugar content of the food of infants who have been on a low sugar diet should be gradually increased in order that they may become accustomed to the altered amounts

In changing from one kind of sugar to another, it is always safe to reduce the quantity for a few days, further increases being governed by the infant's tolerance. Partially replacing of the disaccharids by cereal waters and gruels usually results in the amelioration of digestive disturbances following the use of excessive amounts of sugars. Clinical observations have led to the belief that both sugar and well cooked starches, after the second month, have distinct advantages in the diet.

Maltose and Dextrin Compounds—These have little to recommend them in the feeding of most infants. They can usually be administered in somewhat larger quantities—one-eighth ounce (4 gm) for every pound of normal weight. However, it is to be remembered that similar amounts of carbohydrates can be given by feeding cereals with sugars. In using maltose and dextrin compounds it is to be remembered that their action on the bowels varies greatly, depending on their maltose, dextrin and alkali content. Thus, we find that proprietary foods containing a considerable percentage of dextrin, in the absence of added potassium salts, are constipating, while those with a high maltose content, more especially when containing potassium carbonate or bicarbonate, are laxative in their effect.

Cereals—Cereals in water or gruels may be added to the milk mixtures in quantities varying from one-sixtieth to one-thirtieth ounce (0.5 to 1.0 gm) for each

TABLE 10—GRAMS OF SALTS IN 1000 C.C. OF MILK

	CaO	MgO	P O ₅	Na O	K O	Cl	Fe
Human milk	0.458	0.074	0.345	0.132	0.609	0.358	0.0017
Cow's milk	1.72	0.2	2.437	0.465	1.885	0.822	0.0007

pound of body weight, daily (10 to 20 gm per kilogram). Cereal waters may be used as a diluent as early as the second month of life, and the cereal gruels by the fourth month. The addition of a second carbohydrate to the infant's diet is frequently followed by increases in the weight curve out of proportion to the food value of the cereals. This is especially true when the whole grain rather than the dextrinized flours is used in the preparation. It cannot be stated whether this is due to vitamins or vegetable proteins contained in the preparations made from the whole grain. The cereals also have a decided influence on the calcium and magnesium balance, owing, in all probability, to the same factors.

Salts—Human milk contains 0.2 gm of ash in 100 c.c., and cow's milk 0.75 gm of ash in 100 c.c. The difference in percentage in human and cow's milk is equalized by the body's using only what is necessary for its life and growth. The salts are absolutely necessary for the life of the organism.

Holt, Fales and Courtney, in their studies on calcium metabolism, concluded that

The total absorption of calcium oxid varied in general with the weight of the child. An excessive calcium intake apparently did not increase the calcium absorption the excess being excreted.

The average absorption of calcium oxid by healthy infants taking modifications of cow's milk was 0.09 gm per kilogram of body weight. Since the average absorption of calcium oxid by breast-fed infants was 0.06 gm per kilogram it may be assumed that 0.06 gm per kilogram is the minimum

normal absorption by infants taking modifications of cow's milk.

To insure the average absorption of 0.09 gm of calcium oxid per kilogram, the intake of calcium oxid should be at least 0.19 gm per kilogram with cow's milk feeding to insure an absorption equal to the average found for breast-fed infants. The intake of calcium oxid should be at least 0.13 gm per kilogram.

The best absorption of calcium was obtained when the calcium intake bore a definite relation to the fat intake, that is, when the food contained from 0.045 to 0.060 gm of calcium oxid for every gram of fat and when at the same time the fat intake was ample, not less than 4 gm per kilogram.

An infant receiving one tenth of its body weight in milk, that is 100 gm per kilogram (one and one-half ounces per pound) of body weight will have an intake of 0.17 gm of calcium oxid per kilogram (0.08 gm per pound). At the same time, the infant will have an intake of 4 gm of fat per kilogram (18 gm per pound).

The percentage content of magnesium, sodium and potassium salts is approximately the same in human and in cow's milk, but quantitatively, in cow's milk it is about three times as great. Therefore, in mixtures containing the recommended amount of cow's milk there will be about 50 per cent more of these salts than in the average quantity of breast milk taken by an infant.

Of the inorganic constituents, phosphorus ranks among the most important. Human milk contains 0.345 and cow's milk 2.437 gm of phosphorus pentoxid per liter, a ratio of about 1 to 8. Of this, approximately 43 per cent in human milk and 46 per cent in cow's milk exists as organic compounds. Various authors find that from 53 to 80 per cent of the phosphorus in cow's milk, and from 65 to 90 per cent in human milk, is absorbed. If these figures are correct we may be assured that there is at least sufficient phosphorus in cow's milk mixtures to provide for the infant's needs. Therefore, a question of more importance is the ability of the infant to fix in its body tissues the phosphorus which it receives in its diet.

Theoretically, at least, the iron content in breast as well as cow's milk is insufficient to meet the infant's requirements, and in both instances it must draw to some extent at least on its iron deposits. In artificial feeding it is especially important during the first six months that provision be made for supplementing from other sources the iron contained in the cow's milk.

Salts are necessary for building the body tissue, and each gram of protein retained and built into the body tissue requires approximately one-third gram of ash.

The average infant receiving cow's milk, with its greater salt content, lives on a higher plane of mineral metabolism than one receiving breast milk. In the majority of infants, this excessive salt intake undoubtedly does no harm, the surplus is not absorbed, and is merely eliminated.

Sodium and potassium are usually well retained unless severe diarrhea is present or there is an excess of fat or of sugar in the diet. Under such circumstances the salts are lost, and the loss is badly borne and cannot indefinitely be continued. When all available alkalis have been drawn on, the infant breaks down its own tissue to furnish more of these substances which explains in part at least, the excessive nitrogen excretion in such cases. When diarrhea ceases and the intake is sufficient a positive balance is rapidly instituted.

(To be continued)

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SATURDAY, MARCH 3, 1923

PHYSICAL CAPACITY IN CHILDHOOD

It has become the custom in recent years to speak glibly of "corrective exercises," with the implication that they may play a noteworthy part in both the prevention and the cure of undesirable conditions, particularly during the period of adolescence. If the alleged effectiveness of various types of muscular activity is as real as it has been pictured to be, the subject assuredly deserves most respectful attention from the clinician. A recent writer has remarked that because muscular exercise is so constantly a part of daily life and so obvious in its practical application, medical practitioners have come to regard its physiology as an established truth, into the true nature of which search is unnecessary. The subject of muscular exercise, he adds, should be of more than mere academic interest to the pediatrician.

The problem of exercise in childhood, furthermore, is of importance not only because of the advantage that may be gained from intelligently regulated muscular performance, but also with reference to inherent dangers as well as benefits. During the period of adolescence, when the body is growing rapidly and various vital organs are in process of developmental adjustment, exercise should never be carried to the extreme. Williams¹ has wisely reminded us that in children the one quality that should not be tested is endurance. Many instances are on record of high school athletes being "burned out" by too intensive participation in scholastic sport. Exercise should be used, Williams adds, to build strength and power in the youth, not to waste them. Emerson² has warned against the danger for the undernourished child, even in play, that he will engage in games beyond his strength, or indulge in them for too long a time without rest. Emerson believes that there has been a tendency to overrate the importance of corrective exercises. It should be recognized, he states, that most cases of bad

posture are due to the general weakness of a body with too little weight to support its height. When this condition exists, the first need is to start the child on a program that will bring him up to his normal weight, when it will be found that, as weight increases, the posture improves.

For the present, the precise relationship between cause and effect in connection with postural defects and exercise need not be debated. It can scarcely be questioned that, in any event, physical therapy should be based on physiologic knowledge. THE JOURNAL has often taken occasion to point out how meager is our scientific information regarding the physiology of exercise. Before deciding wherein one may drive or neglect the muscular system, its capacities and limitations must be learned. Facts recently gathered by Seham³ at the University of Minnesota Medical School have a bearing in this connection. They show that, in normal children of school age, all forms of exercise produce an increase in the pulse rate and the blood pressure, the increase depending mainly on the type of exercise. In the majority of cases, the increase of the pulse rate and the blood pressure, as well as the reaction time of the blood pressure, are in direct proportion to the speed and the amount of work performed. These are evidently the same sorts of responses as are encountered in adults. The physical capacity of children, as judged by the maximum physical output, is in direct relationship to the age, circumference of the chest, circumference of the thigh and the vital capacity, height and weight do not alter it so constantly. Such information is part of the essential prelude to an intelligent advocacy of play or the prescription of corrective exercises.

THE GROWTH OF HAIR

The growth of hair presents some sort of problem to innumerable persons, among whom many approach the physician to secure a solution of the difficulty involved. On the one hand are the hordes of people of both sexes and in all walks of life who complain of alopecia. In its extreme forms it shows "a bald, glistening crown closely drawn over the skull." This sad picture, it was recently stated,⁴ is senile, spontaneous or simple baldness. Premature baldness, it is added, is the same thing, save for the fact that it occurs before the age when these changes, which we ordinarily attribute to old age, are expected to appear. To the victims of such circumstances is left the invidious choice of accepting a condition for which no remedy can logically be expected, or of assuming the existence of a seborrheic dermatitis, for the treatment of which no two experts may agree.

¹ Williams, J. F. *Personal Hygiene Applied*. Philadelphia: W. B. Saunders Company, 1922.
² Emerson, W. R. P. *Nutrition and Growth in Children*. New York: D. Appleton Company, 1922.

³ Seham, M. and Egerer, Seham, Grete. *Physiology of Exercise in Childhood. I. A Study of Normal Children of School Age*. *Am. J. Dis. Child.* 25: 1 (Jan.) 1923.
⁴ Osborne, O. T. and Fishbein, Morris. *Handbook of Therapy*. Chicago: American Medical Association, 1920.

The other class of unfortunates consists of those who seek to overcome a hypertrichosis, or excess of hair, on some part of the body. The simplest expedient, cutting off the undesired growth, often meets strenuous objection on the ground that such a procedure is likely to cause subsequent overgrowth. Similar stimulation is believed by many to be associated with applications of various cutaneous lubricants, and sunlight also is charged with encouraging hypertrichosis.

Careful measurement furnishes the best index of growth in any domain of biology. Hence the value of studies recently made in the Department of Anatomy at the Washington University Medical School, St. Louis, by Trotter,⁵ on the normal character and rate of hair growth. Four regions of the body were considered—the axilla, a spot on the head just back of the vertex, the outer side of the forearm, and a region on the leg just below the knee. These selected areas were shaved very closely, and then at weekly intervals several hairs were pulled out and later measured. The differences between the successive measurements, after the first seven-day period, gave the weekly rate of growth. This was shown to be different in the different regions. It appears that the hairs on the arms and legs do not fall out and are not replaced by new ones for a period shorter than eleven weeks.

Shaving, in particular, is regarded as a cause of hypertrichosis, but no justification for this widespread belief could be secured. Likewise, the assumption that sunburn has at best any more than a very transient effect on hair growth fails to receive any support from the observations at St. Louis. Finally, petrolatum, which ranks very high in the popular estimation as a stimulant of hair growth, failed to produce results that spell proof. A true promoter still remains to be discovered.

WHAT WE GET WHEN WE SMOKE

One of the substances abundantly present in tobacco smoke is carbon monoxide, well known as the lethal agent of illuminating gas and of the exhaust gas of motors, which has had so many victims in recent years. Carbon monoxide is not directly poisonous, but displaces oxygen from hemoglobin, for the red cells have 225 times as great an affinity for this gas as for oxygen. Baumberger⁶ has found that tobacco smoke may have from 7.2 to 25 parts of carbon monoxide in 10,000 parts of air, a concentration which Henderson found capable of causing serious symptoms if inhaled for more than an hour. But persons never take in undiluted smoke—the heartiest cigaret fiends and the most resolute pipe smokers always take many breaths of fresh air between puffs. It is estimated that if a person should smoke continuously for one hour, inhaling the smoke five times a minute, there might occur as high as 22 per

cent saturation of the hemoglobin by carbon monoxide, a concentration sufficient to produce headache and perhaps an oxygen shortage during activity, but this figure is undoubtedly far above what smokers do actually accomplish. Perhaps 10 per cent is more nearly the maximum reached in smoking, a figure that has not been found ordinarily to produce symptoms.

Formerly the statement was current that the chief toxic material in tobacco smoke is pyridin, derived by decomposition of nicotine, but later studies agree in indicating that the nicotine is the chief active agent in tobacco smoke exerting much the same physiologic effects as nicotine in corresponding concentrations. By direct analysis, Baumberger found that cigaret smoke contains between 14 and 33 per cent of the nicotine present in the tobacco smoked. Cigarets weigh about 1 gm apiece, and about 80 per cent of the tobacco is smoked, so that the nicotine in the puffed smoke amounts to about 5 mg for each cigaret. Of this, about 67 per cent is absorbed if the smoke is merely taken into the mouth, but 88 per cent is absorbed if the smoke is inhaled into the lungs. How much of this reaches the blood depends chiefly on how much is lost in saliva, the drooling of the novice being an important protective measure, since from 3 to 5 mg of nicotine dissolved in water, taken within half an hour, may cause severe symptoms in nonsmokers, whereas habitual smokers can endure twice as much.

These figures show that an unventilated room 10 feet square and ten feet high, occupied by ten men all smoking cigarettes to the best of their ability for an hour, would come to have an air containing about two parts of carbon monoxide and enough nicotine to furnish 26 mg an hour to the person compelled to breathe it. While these are not large amounts in figures, it is certain that any nonsmokers, and many smokers, in such an environment would have a headache, which is ascribable to the increased intracranial pressure that is produced by both the nicotine and the decreased oxygen in the blood. If our hardened cigaret smoker were to puff away steadily for an hour he might absorb as much as 36 mg of nicotine if he inhaled, and 27.5 if he only puffed. These are amounts that would undoubtedly produce marked effects even on the habituated, but there is at least the consolation that the lethal dose is 500 mg taken at one time. However, the smoker gets much besides carbon monoxide and nicotine for the solids of cigaret smoke weigh about 10 per cent of the tobacco burned, or about 80 mg for each cigaret and all the things it may contain besides the aforementioned are not known, but the experimental evidence indicates that nicotine and carbon monoxide account for most if not all the observed effects.

It is to be considered that these experiments were carried out with cigarettes, for the observations of Lee indicate that tobacco burned in cigar yields much

⁵ Trotter, Mildred. The Resistance of Hair to Certain Supposed Growth Stimulants. *Arch. Dermat. & Syph.* 7: 93 (Jan.) 1923.
⁶ Baumberger, J. P. *J. Pharmacol. & Exper. Therap.* 21: 23 (Feb.) 1923.

Lee, W. E. C.
W. S. Arch. f. exper.

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less nicotin, and presumably less carbon monoxid, in the smoke than when burned in cigars or pipes. For example, a Manila cigar and a cigaret of Virginia tobacco were so burned that the same amount of tobacco was consumed in equal time, and the effect of the products of the combustion determined, it was found that although the cigaret tobacco used contained nearly twice as much nicotin as the cigar tobacco, the smoke of the latter was twice as toxic as the cigaret smoke. The explanation for this is that during the slow combustion of a cigar, as in ordinary smoking, immediately behind the point of combustion is an area in which the water and other volatile substances condense, during the act of smoking, the hot gases pass through this moist area and volatilize the more volatile principles of the tobacco, of which nicotin is one. Therefore the smaller the moist, hot area behind the point of combustion, and the more rapid and complete the combustion, the less likely is the smoke to contain volatile toxic bodies, hence a cigaret or a slender cigar will yield fewer of these products than a thick cigar, and many smokers can testify that a thick, "fat" cigar has much more effect than a long, slender cigar of similar tobacco. The unpleasant effects that the unaccustomed smoker experiences on relighting a half-finished cigar or pipe are explained on the same basis.

HAVE SPERMATOZOA FUNCTIONS AND EFFECTS OTHER THAN FERTILIZATION?

Have spermatozoa any function aside from that of the propagation of the race? is a question that has arisen because of some recent experiments. Guyer¹ showed that when male rabbits and guinea-pigs are injected intravenously with specific spermatoxic serums prepared from fowls, or with spermatozoa directly, sterility results, and the serum of the animal becomes spermatoxic. When the spermatozoa are injected intravenously, according to Tsukahara,² they may cause severe toxic reactions and even death, male animals being more sensitive, and pregnant females more so than nonpregnant.

McCartney³ did not use spermatoxic serums, as did both Dittler⁴ and Guyer, but spermatozoa suspensions directly. In a series of seventy-nine female rats subcutaneously injected with doses of the spermatozoa suspension up to a total of 3 c.c., each cubic centimeter containing 80,000 spermatozoa, he found that the rats remained sterile for a period of from two to twenty-two weeks beyond the normal gestation time, although the normal sexual cycle and sex behavior of the rat seemed in no way altered. The period of from two to twenty-

two weeks at first consideration does not appear to be lengthy, but these results become significant when we consider that the rat is a short lived animal and that a rat 3 years old corresponds to a human being 90 years old. From careful manipulation and tests he concludes that the spermotoxins are present in the vaginal and uterine secretions, and have an immobilizing and agglutinating effect on the spermatozoa. Thus, we can conceive of this mechanism acting in the generative tract to kill the spermatozoa introduced by normal coitus, and thus prevent impregnation of the ova. By examination of incubated eggs from immunized hens he confirmed this conclusion. He also concludes that the degree of immunity is proportional to the amount of the spermatozoa suspension injected, and under proper precautions no deleterious effects are to be expected in the normal nonpregnant female so treated, although he found that the injections tended to cause abortion of existing pregnancy. It is also interesting to note that he found that after the immunity by the injection of spermatozoa had worn off, the female was able again to bear normal young. While spermatozoa injected subcutaneously appear to cause no harm to the female organism other than to cause transient sterility, they seem to have toxic action on the male when similarly administered, as shown by the results of both Guyer and McCartney. In male animals so treated, the spermatozoa in vivo were found immobilized, and the testes in several cases were found atrophied.

From clinical observations, Mayer⁵ and Vogt⁶ conclude that spermotoxins may have a therapeutic, social and economic aspect. Mayer states that abortion of very young ova may result from frequent coitus after a long period of abstinence. Frequent bursting of follicles may result after sexual intemperance, and this may hinder the formation of a corpus luteum, which is so necessary for the embedding of the ova. The toxic effect of sperm overloading may be a reasonable explanation. Vogt assumes that sperm overloading leads to sterility and that a natural cure occurs after prolonged abstinence from sexual intercourse. The first cohabitation is the one that most frequently results in conception, and this may be explained by the absence of the later acquired immunity to spermatozoa. The increased sensitiveness immediately after the menses may be due to the period of abstinence during the menstruation and the consequent weakening of the sperm immunity. Vogt further states that the increased capacity of function of a hypoplastic genital apparatus after marriage, and the disappearance of chlorosis, could be explained by the stimulus of the sperm albumin substance, and this effect seems to be a permanent one. Excessive coitus is thought to cause the woman to lose weight. Vogt gives sexual abstinence as a possible explanation for the rarity of eclampsia.

¹ Guyer M. F. Immune Sera and Certain Biological Problems. *Am. Naturalist* 55: 637, 1922.

² Tsukahara I. The Biology of the Male Sexual Cells. *Ztschr. f. Immunita. forsch. u. exper. Therap.* 34: 444, 1922.

³ McCartney J. L. Studies on Sterilization of the Female by Spermotoxin. *Am. J. Physiol.* 63: 207 (Feb.) 1923.

⁴ Dittler. Spermtoxic Serums. *Munchen. med. Wechnchr.* 67: 1463, 1920.

⁵ Mayer A. Increase of Sterile Marriage Since the War. *Klin. Wechnchr.* 1: 1142, 1922.

⁶ Vogt E. Sterility and Sperm Immunity. *Klin. Wechnchr.* 1: 1144, 1922.

and hyperemesis gravidarum during the war. Thus, we can see that, in cases of sterility, the probability of sperm overloading must be considered. Some claims for the therapeutic value of sperm albumin in the treatment of disease have been advanced, but these lack experimental proof. Specific precipitins may be secured for spermatozoa, as shown by Hektoen,⁷ so that this fact may be used medicolegally.

Whether injection of spermatozoa or spermotoxic serums may be used as a method of sterilization in human biology is a question of the future.

SOME ACHIEVEMENTS OF BIOCHEMICAL ANALYSIS

Even the most enthusiastic optimist would doubtless admit that there are many paths in medicine that lead to discouragement or dissatisfaction. Those who pursue them need to be encouraged from time to time so that they will not falter. He who is brought face to face daily with seemingly insuperable difficulties in diagnosis or therapy is likely to acquire a deadening inertia from such situations unless there is some new spur to his initiative. A retrospect of progress often serves to remind us of how frequently the unexpected happens, and how occasionally the supposedly insoluble is solved. The history of modern microchemical technique in the service of medicine affords an illustrative instance. Myers⁸ has recently pointed out with full justice that, during the decade from 1910 to 1920, the chemical composition of the blood was a topic of increasing interest and importance, quite eclipsing in significance the studies carried out on the urine during the preceding decade. In the case of urine, the advances were primarily the result of the impetus furnished by the new methods of Folin and of S. R. Benedict, and these workers, together with Van Slyke, are responsible for many of our new methods of blood analysis. During the latter period the blood has probably been the topic of more studies than any other body tissue, fluid or secretion. The practical importance now attached to the chemical examination of the blood, Myers concludes, would appear to be rapidly overshadowing the importance formerly attached to urine examination.

A singularly excellent example of the perfection of the analytic technique applied to blood is furnished by recent studies on the interrelations of mother and fetus. By pioneer experiments involving examinations of the blood removed simultaneously from the two organisms, parent and offspring, Slemmons⁹ demonstrated an impressive equality of the nonprotein nitrogenous substances in maternal and fetal blood. Thus, in twenty cases the results for the two organisms did not differ by more than a milligram, and in the others the dif-

ference was usually less than two milligrams. The most instructive illustration of this similarity in the composition of maternal and fetal blood is afforded by a case of twins in which the mother presented 30 mg. and each infant 30.2 mg. of nonprotein nitrogen for each hundred cubic centimeters of blood. Such strict equality of concentration, Slemmons was forced to conclude, cannot well be explained on any other basis than that of simple diffusion through the placental barrier.

More recently, Howe and Givens¹⁰ have made independent comparisons of the blood of mother and fetus in patients at full term. They, too, found only slight discrepancies, and when the values were calculated, almost identical figures were obtained. The average nonprotein nitrogen for mother's blood was 23.8 for each hundred cubic centimeters, for fetal blood it was 23.8. Slemmons⁹ found in the case of the mother an average of 25.2 mg. of nonprotein nitrogen for each hundred cubic centimeters of blood, and in the case of the fetus, 24.9 mg. The possibility of dealing to such a degree of accuracy and agreement with small samples of blood in which the variations involve at most a few milligrams of urea for each hundred cubic centimeters of blood represents a real achievement in biochemical analysis. A science equipped with such helps is more than likely to employ them in fruitful investigation.

Current Comment

ABRAMS' DIVINING ROD: THE APOTHEOSIS OF BUNCOMBE

"Oil Locating Machine Aim of Dr. Abrams' Mysterious Device To Be Exhibited Soon." Thus a Los Angeles paper for February 12 heads, in large and black type, an article detailing the alleged claim of Albert Abrams¹¹ of San Francisco that he has about perfected a machine that will locate the subterranean position of oil. The claim may not be as new as it seems. In his book "New Concepts in Diagnosis and Treatment," published six years ago, Abrams declared that the divining rod is not a superstition and does not belong to occultism "but is entitled to consideration as a scientific fact." In the same book Abrams declared that with his instrument, the "Sphygmobiometer," "it is now possible to demonstrate the wave-metric index of water, oil and minerals." He continues further:

Thus subterranean determination of the foregoing as a prerogative of the specially gifted must be relegated to scientific reality. By aid of the apparatus in question one may even venture further and ascertain quantity and depth.

Abrams was vague—as usual—regarding the details of this wonder and to the paragraph just quoted he appended the footnote "It is impossible to describe the author's methods. They demand personal demonstration." But why should one express astonishment?

7 Hektoen, Ludvig. Specific Precipitin Test for Human Semen. J. A. M. A. 78: 704 (March 11) 1922.

8 Myers, V. C. Barker's Endocrinology and Metabolism. III. 1922. p. 423.

9 Slemmons, J. M. The Nutrition of the Fetus. New Haven: Yale University Press, 1919.

10 Howe, Marion G. and Givens, M. H. Chemical Studies of the Blood of Mother and Fetus. Am. J. Dis. Child. 25: 63 (Jan. 1923).

11 A reprint of the Abrams vagaries will be found on page 44 of the four cents in stamps.

ishment regarding this particular claim of Abrams? To the man who can tell from the autograph of old Samuel Pepys that the famous diarist suffered from congenital syphilis, surely the locating of oil and mineral deposits should be a mere bagatelle. To the man who, from a drop of dried blood, can tell whether the owner of the sanguineous fluid is a Scotch Presbyterian, a Hard-shell Baptist, a Seventh Day Adventist, a Knight of Columbus or a member of the B'nai B'rith, the development of a divining rod is mere child's play. Seriously, however, the disciples of Abrams will need to be more careful in the exploitation of an "oil locating" machine than in their present stunts of diagnosis and treatment of human ailments. Abrams' followers are diagnosing syphilis, cancer, tuberculosis and many other serious diseases in persons not suffering from those diseases and they "get away with it." When the medical profession in the interest of the public protests the findings, the reply is "Your methods of diagnosis are so crude and insensitive that you are unable to find what we have found." This alibi will not work in the less dangerous field of locating oil and minerals. Because of the public's ignorance of the human body and its processes it permits the grossest frauds to be perpetrated when done in the name of the healing art, it resents most savagely, however, chicanery and humbug when property rights are involved. One thing must be said for the Abrams cult. Whatever skepticism we may have of Abrams' accomplishments, he must be given credit for the discovery of the modern Philosopher's Stone, with which his followers transform the dross of credulity and hopefulness into shining shekels of gold.

LOCAL VERSUS GENERAL IMMUNITY

Metchnikoff classified cells that exhibit phagocytic activity into two groups, the microphages and the macrophages. To the former belong the important phagocytes of the circulating blood which have attracted so much attention in all modern considerations of the mechanisms of immunity and the defenses of the organism against bacteria. The macrophages include, in the foremost place, the endothelial cells, although all the primary cells of fixed tissue may be included in the group. Although they are reputed to be most active in ingesting inert tissue detritus, macrophages have been shown to take up bacteria, as in tuberculosis, while pneumococci and streptococci are known to be subject to removal from the circulation by endothelial cells lining the blood vessels.¹ In his presidential address before the American Association of Immunologists, Gray² has stressed anew the importance of the cells derived from the fixed tissues, at any rate, he refers to the gradually increasing conjecture that microphages of local origin are in some way connected with prolonged and sometimes healing processes in streptococcus infection. Thus, a local is distinguished from a general immunity to certain micro-organisms may arise. Only on this hypothesis is it at present possible to

explain a tolerance to specific germs when they enter by certain portals, such as the skin or cutaneous wounds, whereas they may be highly damaging when introduced intravenously. It seems likely, therefore, as Gray concludes, that an appreciation of the local nature of some forms of acquired resistance to bacteria may eventually be of service in improving the method of combating localized infections.

PLACENTAL FUNCTION

If further evidence were required to substantiate the view that the distribution of nutrients and waste products across the placental barrier between mother and fetus does not involve any more complex mechanism than is afforded by the passage of diffusible substances, it could be found in two recent biochemical researches on the blood. Givens and Howe¹ have established anew that diffusion offers the most reasonable explanation for the passage of the nutrient amino-acids and glucose, on the one hand, and such catabolites as urea and uric acid, on the other, through the placenta. The concentrations of each of these substances tend to be essentially the same in the maternal and fetal bloods. This corresponds with the free interchange of diffusible substances that might be anticipated. Quite different, however, are the comparisons of the nondiffusible fats and lipoids in the bloods of mother and fetus at the conclusion of labor. Slemons and Stander² have reported observations from the department of obstetrics at Yale University which teach that the placenta is impenetrable to these compounds. During the latter part of pregnancy the fat, phosphatid and cholesterol of the blood are more abundant than usual, perhaps as a physiologic preparation for lactation. The mother's blood contains much more of these substances than does the fetal blood. The difference that exists between the two organisms in this respect varies from case to case, and Slemons and Stander assert that the values prevailing in one seem to be entirely independent of those in the other. Consequently, they conclude that fetal fat must be synthesized, probably from glucose, which is freely supplied by the mother in accord with the demands of the offspring and which readily passes through the placenta.

HOOKWORM DISEASE IN THE PHILIPPINES

Numerous surveys have indicated a widespread infestation with intestinal parasites among the inhabitants of our insular possessions in the Philippines. The published records involving thousands of examinations in various places there show an incidence well above 80 per cent. In a series of 500 necropsies at Manila, reported by Crowell and Hammack in 1913, for example, intestinal parasites were found in more than 90 per cent of the cases. In view of this extensive parasitism it seems somewhat surprising that hookworm disease has given occasion to so much less concern in the Philippines than it has in many other parts of the world, in some of which much scientific

¹ Kerner H. T. and Ecker E. E. *The Principles of Immunology* Philadelphia J. B. Lippincott Company 1921 p. 154.
² Gray E. P. On Local and General Immunity *J. Immunol.* 8: 1 (Jan.) 1922.

¹ Givens M. H. and Howe M. G. Chemical Studies of the Blood of Mother and Fetus *Am. J. Dis. Child.* 25: 63 (Jan.) 1923.
² Slemons J. M. and Stander H. J. The Lipoids of Maternal and Fetal Blood at the Conclusion of Labor *Bull. Johns Hopkins Hosp.* 34: 7 (Jan.) 1923.

activity is being devoted to the subject at present. Is it due to a comparatively light infestation in these islands or to some sort of immunity? The investigations of Schwartz and Tubanguil¹ at Los Baños may throw light on the question. They have secured information from a very representative group of the population by examining the matriculants at the University of the Philippines. The majority (approximately 85 per cent) of these normal adult Filipinos were infested with one or more intestinal roundworms. Approximately half of them showed infestation with hookworm of either the New World or the Old World species, but the vast majority were very lightly parasitized. Clinical symptoms of hookworm disease are absent, as a rule. Whether a racial immunity is involved in this resistance or whether purely physical or other conditions unfavorable to the life of hookworm eggs and larvae in the soil are responsible for the light infections remains to be ascertained. However, Schwartz and Tubanguil believe that the prevailing notions concerning the lightness of hookworm infestation and the absence of clinical symptoms in Filipinos harboring these parasites, though supported by considerable evidence, should be confirmed by further investigation before the lack of medical importance now attributed to hookworm infections in the native population is accepted as an established fact.

Association News

THE SAN FRANCISCO SESSION

Special Trains Over Various Routes from Eastern Cities

Following is further information concerning special trains to and from San Francisco, and railroad rates from principal cities. See also *THE JOURNAL*, January 27, p. 258.

NEW YORK SPECIAL

A special train will be operated from New York to San Francisco by way of Chicago and over the Santa Fe through the Grand Canyon and Los Angeles. *THE JOURNAL*, January 27, gives further details. Dr. E. Livingston Hunt, 17 West Forty-Third Street, New York, is chairman of the committee in charge of this train.

MICHIGAN GOLF SPECIAL

The "Michigan Golf Special" from Chicago to San Francisco will leave Chicago, June 17, at 8 p. m., and will stop at Omaha, Denver, Salt Lake City, Lake Tahoe and Del Monte, at each of which places a round of golf will be played by those aboard. This train is due to arrive in San Francisco at 8 a. m., June 23. Dr. F. C. Warnshuis, Powers Theatre Building, Grand Rapids, Mich., will give information.

OHIO SPECIAL

The Ohio State Association Special will be operated under the direction of the officers of that association. Mr. Don K. Martin, executive secretary of the Ohio State Medical Association, Columbus, Ohio, will furnish information concerning reservations.

HARLAN TOURS

The Harlan Tours of Chicago will operate the "Medical Special De Luxe." Information about this train was given in *THE JOURNAL*, February 3.

SANTA FE CHICAGO SPECIAL

The Santa Fe Railroad will run a train, to be called the "American Medical Special," which will leave Chicago at

8 15 p. m., June 16. Short stopovers will be made at Kansas City, Colorado Springs, Santa Fe and Albuquerque. The train of June 20 will be spent at the Grand Canyon. This train is due in Los Angeles at 3 30 p. m., June 21. From Los Angeles, choice may be made of rail or boat service to San Francisco. Detailed information may be obtained from I. R. Moriarty, Division Passenger Agent, A. T. & S. F. Ry., 179 West Jackson Street, Chicago.

Side Trips from San Francisco

Dr. W. E. Musgrave, chairman of the Local Committee of Arrangements at San Francisco, has submitted information concerning tours which may be taken, with San Francisco as a starting point, after the annual session.

A three weeks' trip to Honolulu on a special boat touching all principal ports, including the leper colony, and return to San Francisco.

A trip up the western coast to Alaska and return. Those desiring to do so may leave the boat at Vancouver and return east over the Canadian Pacific or at Seattle and return east over the Great Northern or at Portland and then east over any available line. Returning to San Francisco, those who take this coast trip may return east by way of Los Angeles or the Panama Canal.

An oriental tour beginning at San Francisco, and leaving that city a day or two after the close of the annual session. Such tours will include Japan, China and the Philippine Islands and return to San Francisco or a return by way of the Suez Canal and Europe.

A trip to Honolulu with six days in that city and on the Island of Oahu, and two days in Hilo and the Kilauea National Park, with a visit by day and by night to the active volcano of Kilauea.

An Alaskan tour embracing a twenty-four day cruise. Stops will be made at Ketchikan, Wrangell, Petersburg, Taku Glacier and Juneau. At Skagway, a railroad trip to Bennett Station will be begun, returning, the boat will proceed to Sitka, from which place six days will be spent in the inside passage en route to Seattle. From Seattle a four days' trip to Rainier National Park will be made.

A tour which includes visits to Yellowstone Glacier and Rainier National Parks.

A comprehensive tour that will take four weeks for sightseeing in the Canadian Rockies.

Inquiries concerning transportation from eastern ports to San Francisco by way of the Panama Canal should be referred to steamship offices. It will be possible for those who wish to go to San Francisco by way of the Panama Canal to return by railroad.

For further information regarding side trips address Chairman, Committee of Arrangements, 806 Balboa Building, San Francisco.

Railroad Rates

The following summer tourist round trip rates are submitted, on what is thought to be thoroughly reliable information as approximately the rates that will be in effect for the annual session: from Chicago \$86, from Kansas City \$72, from St. Louis \$81.50, from Omaha \$72, from New Orleans \$85.15, from Atlanta \$106.85, from Boston \$144.80, from Buffalo \$116.10, from Cincinnati \$101.35, from Memphis via St. Louis \$85.15 but via Chicago \$93.20, from Cleveland \$105.65, from Detroit \$101.70, from Indianapolis \$95.70, from New York \$138.32, from Jacksonville Fla. \$119.83, from Philadelphia \$133.14, from Pittsburgh \$113.05, from Washington \$130.45, from Nashville \$94.85, from Louisville \$97.75, from Richmond \$130.45.

These rates will permit stopovers and will also permit return by a different route than that used in going to San Francisco. Those desiring to return by way of the northern routes will be required to pay \$18 additional.

Differentiation of Microbial Species—The differentiation and classification of microbial species is certainly the most difficult of all problems in bacteriology. When one finds what he considers a new species, he is at once aware of the lack of means to characterize it adequately so that it may be recognized by others.—Bushnell *J. Bacteriol.* July, 1922.

¹ Schwartz B. and Tubanguil M. A. The Prevalence of Hookworm and Other Intestinal Nematodes in Adult Filipinos. *J. Parasitol.* 8: 83 (Dec.) 1922.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION PUBLIC HEALTH, ETC.)

ALABAMA

Illegal Practitioner Fined—It is reported that J C Belding, Powderly, was fined \$100 in the police court, February 8, for practicing medicine without a license

Cooperation in Mosquito Eradication—In the fight against mosquitoes, the insurance companies, to avoid loss such as was suffered in the recent dengue fever epidemic, will cooperate this year with the U S Public Health Service. The state department of health is making an effort to establish full-time health units in every county of the state, to aid in the spring campaign against mosquitoes

ARKANSAS

Personal—The governor has appointed Dr Rutal O Norris, Tuckerman, a member of the board of health for a four-year term, to succeed Dr Cyrus F Crosby, Texarkana, whose term expired—Dr Henry Pace, Eureka Springs, has been appointed health officer to succeed Dr C F Ellis, who resigned recently

CALIFORNIA

Naturopaths May Prescribe Whisky—In a letter to Prohibition Commissioner Haynes Washington, D C, State Prohibition Director Rutter, announced, February 20, that the state appellate court of California held that naturopaths are physicians, in view of this decision, he urged that naturopaths be accorded the privilege of obtaining whisky prescription books

COLORADO

Personal—Dr Thomas M Toler, Ault, has become associated with Dr Silas A Bryan in the management of the local hospital at Silverton—Dr Royal H Finney and Dr George M Blickensderfer were recently elected presidents of the Pueblo County and the Denver County medical societies, respectively

Station to Station Clinic—A station to station clinic has recently been demonstrated in three Colorado towns by the University of Colorado, cooperating with the child welfare bureau, the state board of health and the state tuberculosis association. Limon, Elizabeth, and Castle Rock were chosen for the experiment. The program in each town included a conference on child welfare, public health and community problems, free physical examination of children of preschool and school age, and exhibits dealing with child welfare, public health and recreation. Drs R P Forbes, J C Savage and Elsie Pratt, specialists from Denver, examined the children at the different cities, and found that about one half of them from 2 years to high school age were underweight

CONNECTICUT

Yale University News—The tenth annual celebration of Alumni University Day was held at New Haven, February 22—A bill now before the Connecticut Legislature entitled "An Act for the Establishment of a Psychiatric Hospital" calls for an expenditure of \$250,000 for the establishment of the hospital and an annual appropriation for maintenance on the part of the state. The university will provide the site for the hospital funds for the support of the medical staff and for investigations into the cause, nature and prevention of mental disease. The bill was the result of an investigation by the state psychopathic commission, which reported the need of such an institution and recommended its location in New Haven in conjunction with the school of medicine

DISTRICT OF COLUMBIA

Building for Tuberculous Pupils—A bill was introduced in the House by Representative Focht to provide for the erection of a building for the care of tuberculous pupils on the Upshur Street tract or land in the city of Washington at a cost of \$150,000

Honorary Degrees Conferred—At a meeting of the board of trustees of the Lincoln Memorial University at Washing-

ton, February 12, the honorary degree of doctor of science was conferred on Dr Eugene Hertoghe of Antwerp, Belgium, Dr William Seaman Bainbridge, New York, received the honorary degree of doctor of letters, and Dr John Harvey Kellogg, Battle Creek, Mich., Secretary of War Weeks and Secretary of the Treasury Mellon received the honorary degree of doctor of laws

GEORGIA

Personal—Dr Alfred F White, Flovilla, has been elected president of the Georgia State Medical Board—A dinner was given in honor of Dr Albert B Landrum, Columbus, Ohio, by the Alpha Kappa Kappa medical fraternity, at Atlanta, February 15. Dr Landrum is grand secretary of the fraternity—Dr Henry Hanson, director of public health, Republic of Peru, gave an address on "Prophylaxis of Yellow Fever and Malaria in South America" before a special meeting of the Medical Association of Georgia, at Savannah, February 6—Dr Richard L DeSaussure, Brunswick, has resigned as county health commissioner of Glynn County, to accept a similar position in Ohio

ILLINOIS

Chiropractor Loses Malpractice Suit—In the case of Frank Scroggins against John DeBow, a chiropractor of Granite City, for alleged malpractice, the plaintiff was awarded \$4,000 damages. Scroggins claimed that following treatments given him by DeBow for goiter he was obliged to go to a hospital

Peoria Physicians' Fellowship Club—At a meeting, February 15, pending legislation affecting the profession was discussed. Addresses were delivered by Dr Charles Humiston of Chicago, Dr Edwin P Sloan, Bloomington, president of the Illinois State Medical Society, Dr John R Neal, Springfield legislative representative of the state medical society and Dr William D Chapman, Silvis, secretary of the state society

Osteopathic Bill Introduced—A bill called the Osteopathic Practice Act has been introduced in the legislature. It would provide for the regular licensure of applicants to practice osteopathy provided such applicants demonstrate to the state department of registration and education well defined minimum educational qualifications, and provided they successfully pass examinations given by the department. The bill would make it unnecessary for the applicant to be examined on the subjects of materia medica, therapeutics, surgery, obstetrics and the theory of practice

Emergency Appropriation for Antitoxin—The state legislature has passed a deficiency bill making an emergency appropriation of \$35,000 to the state department of public health for the purchase of diphtheria antitoxin for free distribution. Funds provided by the previous general assembly for that purpose had been completely exhausted. The emergency appropriation funds have been placed to the credit of the department, and all needs of local physicians for antitoxin during the remainder of the fiscal year are assured. Physicians may obtain the free antitoxin in necessary quantities through the 434 distributing agents, at least one of which is located in every county seat. There are sixty-nine in Chicago

Chicago

"Physiotherapist" Convicted—It is reported that "Dr" J D Levine a physiotherapist, was found guilty, February 21 of practicing medicine without a license. One witness testified that Levine massaged her spine so severely that a rib was broken

Fraternity Banquet—The annual dinner of the Alpha Omega Alpha honorary fraternity, sponsored by the three Chicago chapters, will be held at the Auditorium Hotel, March 6, the second day of the conference on medical education. All members of the fraternity and their friends are urged to be present

Personal—Dr B Barker Beeson addressed the Allen County Medical Society at Fort Wayne, Ind., January 30, and the Woodbury County Medical Society at Sioux City, Iowa, February 17, on "The Diagnosis of the Commoner Skin Diseases"—Dr Carl Beck, who recently returned from a six months trip abroad spoke on "The Surgical Methods Employed in European Clinics for the Treatment of Gastric and Duodenal Ulcer," before the Laboratory of Surgical Technique of Chicago, February 23

Society News—A dinner in honor of Dr G Edward de Schweinitz, Philadelphia, President of the American Medical Association, will be given by the Chicago Ophthalmolo-

logical Society at the Hotel Sherman, March 6. The regular monthly meeting of the society will be held, March 7, in conjunction with the Chicago Medical Society, at which Dr de Schweinitz will be the guest of honor—Dr William E Grove, Milwaukee, will address the Chicago Laryngological and Otological Society, March 5, on the subject of 'Parotid Fistulae in Mastoid Operations'—A dinner in honor of Dr William W Duke, Kansas City, Mo., was given at the Hamilton Club, February 28. Following the dinner Dr Duke read a paper on 'Specific Hypersensitiveness as a Common Cause of Illness' before the Chicago Medical Society.

INDIANA

Personal—Dr Frank W Foxworthy has returned to Indianapolis after several months spent in South America, where he served as a commissioner to the Brazilian Centennial Exposition in Rio de Janeiro—Dr Neil E Fund, La Porte, has been appointed county physician to succeed Dr George W Kimball, who resigned recently.

Beardsley Bill Passed—The Beardsley bill, which failed to pass at the third reading, February 8, on account of the absence of a constitutional majority was passed by the Indiana senate, February 14 by a vote of 30 to 12. This bill, commits the state to cooperation with the federal government under the Sheppard-Towner Maternity Act.

Lectures on Forensic Medicine—A series of clinical lectures on forensic medicine for law students attorneys, and physicians, has been given at the Central Indiana Hospital for the Insane at Indianapolis. The subject of the sixth lecture, given February 15, was "Paranoia and Paranoid States of Epileptic, Toxic Hysterical and Traumatic Insanities." An invitational lecture was given at the hospital, March 1, to lawyers on "Disposition of the Unfit."

IOWA

Proposed Affiliation of Colleges with Nursing School—Dr Charles S Chase professor of materia medica and pharmacology at the State University of Iowa College of Medicine, Iowa City, held conferences with the officials of Grinnell Penn, and Central colleges, recently, regarding an affiliation with the school of nursing at the university, whereby the courses may be combined to offer to students a certificate as registered nurse.

KENTUCKY

"Habit Clinic" Opened—The second habit clinic in the United States has been established by the Psychological Clinic in Louisville under the supervision of the Louisville Society for Mental Hygiene. The first clinic was established in Boston in 1922. The clinic is for children of preschool age who show pernicious or persistent habits which if unchecked may become serious.

Public Health News—At the annual meeting of the Kentucky State Board of Health, held in Louisville, recently, under the presidency of Dr Lewis S McMurtry the following appointments were made. Dr Philip E Blackerby assistant state health officer was elected director of the bureau of country health work, Dr Lillian H South was appointed director of the bureau of bacteriology and epidemiology, Dr John S Lock, director of the bureau of tuberculosis, Dr Annie Veech director of the bureau of child hygiene, Dr Jethra Hancock director of the bureau of venereal disease, Dr Charles B Kobert director of the bureau of trachoma and conservation of vision, Dr Samuel W Bates superintendent of the State Tuberculosis Sanatorium Hazelwood, Dr Frank J O'Brien director of the bureau of mental hygiene, and Miss Williamson director of the bureau of public nursing. Each of the terms are for four years—A health exposition was held in Louisville beginning February 14. The U S Public Health Service by means of six lecturers, conducted a six-day course of instruction in urban and rural sanitation and disease prevention for health officers and public health nurses. Educational scientific and health exhibits were displayed under the direction of Dr Irvin Lindenberger, county health officer.

LOUISIANA

Honor for Dr Matas—Dr Rudolph Matas New Orleans has been elected a member of the Royal Academy of Barcelona, Spain, and a corresponding member of the Societe de chirurgie at Paris.

Narcotic Clinic Closed—The Shreveport narcotic clinic known as the Public Health Hospital, was closed, February 10. It was the last of its kind in the United States. A decision to discontinue the clinic was reached at a conference at which were present a representative of the Treasury Department U S District Attorney Mecom and Dr Willis P Butler, who had charge of the clinic.

MARYLAND

Officers of County Association Elected—At the monthly meeting of the Baltimore County Medical Association at Towson, February 21, Dr Albert L Wilkinson was elected president, and Dr Robert H Rile, secretary.

British Ambassador Honored—Johns Hopkins University, Baltimore, has bestowed the honorary degree of doctor of laws on Sir Auckland Campbell Geddes British ambassador at Washington. Dr Geddes graduated from the University of Edinburgh, Scotland, in 1903.

Joint Meeting of Medical Societies—The Baltimore City Medical Society was the guest of the District of Columbia Medical Society February 21 at its new medical library in Washington. The program was as follows: 'Cardiovascular Symptoms in Thyroid Disease' Maurice C Pincoffs, 'Some Ophthalmological Aspects of Tuberculosis' Harry Friendenwald. 'What the Medical Profession Should Know and Do About Preventive Medicine and Surgery,' Joseph C Bloodgood.

MICHIGAN

Toxin-Antitoxin Recalled—All diphtheria toxin-antitoxin which was shipped to distributing stations in the state during November and December, 1922 has been recalled by the state health department and replaced by a new supply. Much of that now being turned in was prepared in the spring and summer of 1921.

MINNESOTA

Medical Bill Defeated—The medical bill before the Minnesota State Legislature known as the Basic Science bill was defeated in the committee and by the house recently. This bill, which was supported by the state medical association required of all applicants for license to practice in Minnesota a knowledge of physiology, anatomy and pathology.

County Society Reorganized—After several years of inactivity the McLeod County Medical Society was revived at a meeting held in Hutchinson, January 25. Officers were elected as follows: president Dr W R Schmidt, Glencoe vice president Dr P E Sheppard Hutchinson and secretary-treasurer Dr D L Aulirod Hutchinson. The next meeting will be held in April.

Quarantine for Social Diseases—Mayor Snively of Duluth appointed a committee recently to confer with the county board of commissioners regarding a temporary quarantine hospital in the city for patients suffering from venereal disease. It is proposed to establish a temporary hospital until the new jail is erected when it is expected the old jail will be used as a permanent hospital for social diseases.

MISSOURI

Dean Loeb Visits Orient—Dr Hinau W Loeb dean of the St Louis University School of Medicine sailed from San Francisco February 22 for a tour of the Orient. During his trip Dr Loeb will visit the medical schools of Japan, China and the Philippines.

Professor Asher to Lecture—Dr Leon Asher professor of physiology at the University of Bern Switzerland, will deliver a series of lectures on 'The Physiology of the Lymphatics' at the St Louis University School of Medicine March 5-9 inclusive. The five lectures will be delivered in the university auditorium.

Personal—Dr James Moores Ball St Louis will sail on the Cunarder *Indama* April 14 to attend the annual meeting of the Ophthalmological Society of the United Kingdom to be held in London April 25—Dr Albert E. Holly, St Joseph has been appointed county physician to succeed Dr Walter Hansen—Dr Horace W. Carle has been elected president of the board of health of St Joseph to succeed Dr John M. Bell, who resigned recently—Dr Franklin I. Murphy Kansas City has resigned as a member of the state board of health.

MONTANA

Rocky Mountain Spotted Fever Investigation—Several distinguished scientists, including Dr Simcon B Wobach of the Harvard Medical School, Boston, and Dr Hideyo Noguchi of the Rockefeller Institute for Medical Research New York, are at Hamilton, conducting research work on Rocky Mountain spotted fever. Their work will continue for several months.

NEW MEXICO

Appropriations for Health Work—An increase of \$11,000, or a total of \$38,000, is being asked by the New Mexico Bureau of Public Health for health work in the state. It is also asking the legislature for appropriations to assist counties in developing full-time county health departments. The state department of health has announced that it will lend state films, slides and card exhibits dealing with venereal disease and social hygiene to county and city health officers, also stereopticons, portable moving picture projectors and card exhibit frames. A few slides on the subjects of milk, food, teeth, adenoids and tonsils are available for loan.

NEW YORK

Memorial to Dr Wyeth—A memorial service for Dr John A Wyeth, who died in May, 1922, was held at the New York Polyclinic Medical School and Hospital, February 27.

Triplets Break Record—The superintendent of the Nursery and Child's Hospital reports that for the first time in the ninety-nine years of the institution's existence, triplets were born there, February 24.

A New Name for Bedford Reformatory—Managers of the State Reformatory for Women at Bedford have applied to the legislature for permission to change the name of the institution to 'Bedford Farms.'

Dinner for Dr Jennings—Dr Frank D Jennings, past president of the Kings County Medical Society, was guest of honor at a dinner, February 17, in Brooklyn, as centenary president of the organization. Dr William F Campbell presided at the dinner, at which more than 200 borough physicians were present.

Scholarships for Ophthalmologists—The Italian Medical Society of New York has been notified by the Department of Ophthalmology of the University of Rome that two assistantships without salary are offered to American medical graduates of Italian extraction. Further information with reference to these scholarships may be had by writing to the Societa Medica Italiana, 47 West Forty-Second Street, New York.

Investigation of Narcotics Proposed—Assemblyman Maurice Bloch of New York, who recently introduced a bill into the legislature providing for the restoration of the old system of reinforcing the federal antidrug act by local authorities, has introduced a concurrent resolution providing for investigation of the drug evil by a commission composed of two senators, three assemblymen and three citizens, to be appointed by the governor. The resolution carried an appropriation of \$20,000 and gives the commission a year in which to complete the proposed inquiry.

Personal—Dr Paul W Beavan Rochester, spoke on "Hypertrophic Stenosis of the Pylorus," before the Rochester Pathological Society, January 18.—Dr Maurice C Ashley, for more than twenty years superintendent of the State Homeopathic Hospital, Middletown has resigned, the resignation being effective May 1.—Dr Francis E Fronczak, health commissioner of Buffalo was decorated with the Polish Cross of Valor at the Polish consuls office, February 16 for services rendered with the Polish army. This is the third decoration Dr Fronczak has received from Poland.

Physicians Organize to Fight Narcotics—Appointment of a committee of fourteen physicians to act in an advisory capacity to the Society for the Suppression of the Narcotic Drug Evil was announced by Dr Copeland February 14. Members of the committee are Royal S Copeland chairman, Wendell C Phillips, trustee of the American Medical Association, Daniel S Dougherty, secretary of the Medical Society of the County of New York, Carleton Simon, special deputy police commissioner in charge of narcotic work, Charles L Dana, chairman of the public health committee of the New York Academy of Medicine, Arthur F Chace, president of the county medical society, Antonio Stella, Harlow Brooks, Eugene H Pool, Samuel I Kopetsky, Charles H Peck, Orrin S Wightman, Frederick E Sondern and John E Wilson.

New York City

Schools Close on Account of Illness—The prevalence of colds, influenza and pneumonia led the board of education to grant a recess, February 22-26. February 19, there were 2,000 teachers absent from their classes, 800 of which had to be suspended.

American College of Rehabilitation Organized—At a meeting held at the New York Academy of Medicine a company was organized for the establishment of an American College of Rehabilitation for training workers in the field of reconstruction of the wounded and crippled. The sponsors are Dr Fred H Albee, Mrs Clarence Cary, Martin A Metzner, W J Hoggson, R Gradwell and Standish Chard.

Acceptance of Rebates by Physicians Condemned—Resolutions were passed by the New York Academy of Medicine at a stated meeting held, February 15, setting forth that numerous instances had been brought to the attention of the Council and the Public Health Committee of the Academy of rebates being offered to, and accepted by, physicians from commercial laboratories, opticians, druggists and others to whom patients were referred. It was therefore resolved that "The New York Academy of Medicine condemns such practices on the part of those offering the rebates, as well as on the part of physicians accepting them, as being unethical and detrimental to the medical profession."

NORTH CAROLINA

Nurses' State Examining Board—The Quirkle bill, which would have amended the organization of the state nurses examining board, providing for representations on the board by the state hospital association, and the state medical association as well as the nursing association, was defeated at Raleigh, February 7. Following a hearing before the house committee, the bill was killed by unanimous vote. Contention was made by the nurses, supported by the Buncombe County Medical Society and others, that by reducing their representation on the examining board, nursing standards in the state would be lowered.

OHIO

State Medical Board Elects—At the regular quarterly meeting of the board in Columbus, January 2-3, the following officers were elected for the ensuing year: president Dr T Addison McCann, Dayton, vice president, Dr John K Scudder, Cincinnati, treasurer, Dr John H J Upham, Columbus, and secretary, Dr Herbert M Platter, Columbus.

Medical Board Upheld—The right of the medical board to compel chiropractors to stop practicing unless they hold state licenses was affirmed by Common Pleas Judge Ahern February 16 when he refused Herman J Kroeger an injunction to restrain the state board from further interference with chiropractors. Reports state that Kroeger, a chiropractic patient, filed petition in the common pleas court to enjoin the state medical board from interfering with members of the chiropractic profession.

Society News—A banquet in celebration of the fiftieth anniversary of the organization of the Mahoning County Medical Society was held at the Country Club, Youngstown February 1. Dr Charles D Humes, Indianapolis, read a paper on "Traumatic Neuroses." Dr Timothy Woodbridge was the first president, and Dr William J Whelan, the first secretary, of the society.—At a meeting, March 6, of the Summit County Medical Society at Akron, Mr O N Harter, president of the Ohio Milk Distributors' Association will give an address on "The Relation of the Milkman to the Medical Profession," and C H Case, a veterinary surgeon, will speak on "Tuberculosis in Cattle."

Personal—Drs Alfred G Farmer and Jesse Grant Marthens were elected president and secretary respectively, of the Dayton Academy of Medicine January 12.—Prof R G Hoskins, head of the department of physiology Ohio State University College of Medicine Columbus has returned from a lecture tour on the Pacific coast.—Dr Walter D Hancock, Millville, aged 75, having retired after fifty years of medical practice, has gone on a three months' trip to South America.—Dr James F Baldwin, ex-president of the state medical society (1922) and formerly professor of surgery, Starling Medical College Columbus, spoke on "Some Great Contributions of History" before the Wayne County Medical Society at Detroit February 19.—Dr Paul W Bailey, an ambulance surgeon of the General Hospital Cincinnati, was seriously injured January 31 when his ambulance collided with an automobile.—Dr A B Denison as assistant superintendent

of the Lakeside Hospital, Cleveland, has been appointed superintendent to succeed Dr Robert H Bishop, Jr, who has been appointed secretary of the University Medical School group

PENNSYLVANIA

Philadelphia

Library Committee Issues Report—The library committee of the College of Physicians has issued its report for 1922. At this time, the library contains 136,489 volumes, 14,677 theses and 131,866 unbound pamphlets. During the year 6,430 volumes, 11,418 pamphlets and 16,016 periodicals were received. The library has 10,505 portraits and 336 incunabula. It was used during the year by 8,296 persons.

Society News—At the annual meeting of the Philadelphia Pediatric Society, Dr Horace H Jenks was elected president, Dr A Graeme Mitchell, vice president, and Dr John P Scott, secretary. Drs John H Jopson and John S Rodman were elected president and secretary respectively, of the Philadelphia Academy of Surgery at the annual meeting recently. Dr William H Carpenter was elected president of the Medical Examiners' Association of Philadelphia for the ensuing year.

University Day—Four hundred students of the University of Pennsylvania, members of the faculty and trustees, celebrated, February 22, the ninety-eighth annual University Day, exercises in the Academy of Music. The meeting not only commemorated the birthday of Washington who was a patron of the university, but was the occasion for conferring honorary degrees. The degree of doctor of science was conferred on Dr Chevalier Jackson of the graduate school of the university.

Site for College of Pharmacy Dedicated—The site at Woodland Avenue and Forty-Second Street Philadelphia, for the new buildings of the Philadelphia College of Pharmacy and Science, was dedicated, February 23. Rear Admiral Braisted, former Surgeon-General of the Navy and president of the college, delivered the dedicatory address. It was announced that more than \$1,000,000 had been collected since last November in the campaign for \$2,000,000 for the erection of buildings. The college was founded by Benjamin Franklin.

SOUTH CAROLINA

Narcotic Bill Killed—State control of the sale of narcotics and other habit forming drugs was rejected by the house of representatives, February 7, when the Lewis bill which would limit the sale of such preparations to licensed druggists, physicians, veterinary surgeons, trained nurses dentists and hospitals, was killed.

SOUTH DAKOTA

Eyesight Conservation Campaign—The South Dakota State Medical Association is conducting a campaign throughout the state for the dissemination of information to the public on the care of the eyes. The state society is voluntarily paying for this work from its own funds, and Dr Joseph G Parson, Sioux Falls, chairman of the committee on conservation of vision for the state medical society, has been giving illustrated lectures on the care of the eyes to the various schools and college clubs in Sioux Falls and other towns.

VIRGINIA

Public Health Work in Virginia—At the annual conference of public health workers at Richmond in December the progress of county health work in the state was outlined. In 1908 the state had no full-time county health workers, in 1912 the first full-time health officer went on duty, in 1917 five counties had full-time health officers, and in 1922 thirty-two counties employed full-time health workers.

PHILIPPINE ISLANDS

Physicians Elected to the Philippine Legislature—Dr Tomas Gomez was elected a member of the senate and Drs Agapito Buenconsejo, Raymundo Camacho, Eliseo Limsiaco and Vicente E Manapat were elected to the house of representatives.

Lecture on Medical History—Lieut Col F H Garrison Washington, D C, U S Army Medical Department Research Board, gave a series of six lectures on the history of medicine before the faculty and student body of the College of Medicine and Surgery of the University of the Philippines, Manila, recently.

Social Hygiene Association—The Philippine Island Social Hygiene Association applied for charter, January 1. The educational and religious leaders of Manila formed this organization to study and better social hygiene conditions in the islands. Activities already under way include a survey of vice conditions in Manila and its environs and of the sex educational literature used in the normal schools and colleges.

CANADA

Hospital News—The Hospitalieres Sisters, who have been conducting the Hotel Dieu in Quebec since the first days of the colony will take charge of the new hospital to be erected on Ste Foye Road. The new institution will be a general hospital.

Canada Asks United States to Help in Drug Fight—Canadian officials of the dominion narcotics department will ask cooperation of the United States, it is stated, in a campaign against the international drug traffic. These officials will visit Washington to formulate some international plan. There are 15,000 known drug addicts in Canada, and evidence of the existence of an international dope ring with headquarters in Montreal and with operatives working in Chicago and New York has been discovered.

Personal—Prof J C McLennan professor of physics at the University of Toronto, has been granted leave of absence for the remainder of the school year. He will visit laboratories in Great Britain, France and Holland and return in September. Drs Duncan N MacLennan and William Lowry have been appointed assistant professors in ophthalmology in the University of Toronto. Dr Herbert A Bruce, Toronto, addressed the Wayne County Medical Society, at Detroit, February 26, on "Some Observations on the Diseases of the Gallbladder and Pancreas."

Epidemic Encephalitis in Winnipeg—Newspapers have carried exaggerated accounts of an epidemic of encephalitis said to have occurred in Winnipeg. THE JOURNAL, in order to present the facts telegraphed to Dr A J Douglas, health officer of Winnipeg, who replies: "The first case of encephalitis was notified January 12 and since then eighty-five cases have been reported. Eight of these came in from rural points. There have been seventeen deaths with the myoclonic form predominating. There seems to be no discoverable connection between any of the cases. During the past ten days the number of cases has been decreasing and the type is milder."

GENERAL

Postmaster General Work to Interior Department—It is announced that on April 3 Postmaster General Hubert Work, former president of the American Medical Association, will become Secretary of the Interior in the cabinet of President Harding, being succeeded by Senator New of Indiana as Postmaster General.

Bill to Prohibit Interstate Commerce in Heroin—Interstate commerce in heroin (diacetylmorphin) is prohibited in a bill introduced in the Senate by Senator Ladd. Persons violating the proposed law shall be fined not less than \$1,000 or sentenced to one year's imprisonment. The measure was referred to the Committee on Interstate Commerce of the Senate.

Sioux Valley Eye and Ear Academy—At the tenth annual meeting of the academy in Sioux City, January 24 the following officers were elected for the ensuing year: president, Dr Jesse B Naftzger, Sioux City, Iowa; vice president, Dr Samuel A Keller, Sioux Falls, S D, and secretary, Dr Lorenzo N Grosvenor, Huron, S D. The next meeting will be held at Omaha.

Large Fund for Oriental Colleges—A campaign was opened in December in the United States to raise funds for the medical schools for women in India, China and Japan, which if secured before January 1 would insure a gift of \$500,000 from John D Rockefeller. Dr Tehvi Hsieh, Dr Ida Scudder, principal of the Women's Medical College, Vellore, India, and Dr Mabel M Manderson, former dean of the North China Medical College for Women, Peking, toured the United States lecturing for this movement. It was announced recently by the Women's Foreign Missionary Society of the Methodist Episcopal Church that more than \$2,000,000 had been raised for the six oriental colleges for women.

Eye Sight Conservation Council of —The meeting of the council was held in Fe-

at the Pennsylvania Hotel, under the presidency of L W Wallace, Washington, D C General Director Guy A Henry presented the annual report, stating that more than 533,000 folders and pamphlets had been sent out during the year Prof F C Caldwell, Ohio State University, delivered an address on "Glare," and Dr Homer E Smith, New York, spoke on "The Marvels of Vision" The same officers were elected for the ensuing year, with the exception of the vice president Bailey B Burritt, New York, was elected to succeed Dr Cassius D Wescott of Chicago

Reunion of "The Blizzard Class"—The class of 1888 of Bellevue Hospital Medical College, New York, will celebrate its thirty-fifth anniversary, March 12 Because of its graduation on the day of the most terrible blizzard New York ever experienced the class was named by the late Professor Doremus "The Blizzard Class" Dr D Hunter McAlpin, the class president, has invited all the surviving members to be his guests at a dinner at the McAlpin Hotel on that date Those of the class who have not been reached by direct invitation because of faulty or insufficient address will please communicate with the acting secretary, Dr S Adolphus Knopf, 16 West Ninety-Fifth Street, New York

Resolutions on Narcotics Favorably Reported—Feb 23, 1923, the Committee on Foreign Affairs, after hearings, reported favorably the Porter resolutions on narcotics (THE JOURNAL, February 17, p 488) to the House of Representatives The report of the committee states in part that "notwithstanding that many nations have antinarcotic laws which impose heavy penalties for violation thereof, unlawful traffic in habit-forming narcotic drugs continues In the United States, although our laws are designed to suppress illicit handling of these drugs, their use by addicts is constantly growing, and we are justified in the conclusion that radical and efficacious remedial action must be inaugurated and strictly enforced"

Rockefeller Foundation Announcements—The Rockefeller Foundation has elected to its board of trustees Dr Raymond Wilbur, president of Stanford University, California, William Allen White, editor, Emporia, Kan, and to membership on the International Health Board, Dr David L dsall, dean of Harvard Medical School—The foundation has authorized a system of fellowships in the biologic sciences comparable to those now administered by the National Research Council, under foundation funds in physics and chemistry and in the medical sciences—Leave of absence has been granted to President George Vincent to enable him to go as a delegate of the United States to the Fifth Pan-American Congress, Santiago, Chile, during March and April During his absence, the secretary, E R Embree, will perform the functions of president

Bequests and Donations—The following bequests and donations have recently been announced

Sisters of Charity Richmond Va on the death of his widow half of the \$6 000 000 estate of Mayor James H Dooley for the endowment of a hospital and two orphanages for girls

Reid Memorial Hospital Richmond Ind \$100 000 by Daniel G Reid of New York Of this sum \$50 000 is given outright contingent on the city raising a like sum, for the purpose of enlarging the institution

Portsmouth Hospital, Portsmouth N H \$100 000 for the treatment of tuberculosis and for a contagious ward by the will of Mrs M Jenness DeGarmendia who died in Paris France January 9

Nyack (N Y) Hospital \$90 000 on the death of the beneficiaries under the will of W B Conrad

Norwood (Mass) Hospital \$60 000 in memory of her husband by the will of Mrs Alice H Plumpton

Norwich (N Y) Hospital the greater part of a \$20 000 estate under the will of Emery S Reynolds

Flushing (L I) Hospital \$25 000 by the will of Mrs A M Booth

Rockingham Memorial Hospital Harrisonburg Va \$10 000 by the will of Miss Clara Chaunceyline

Roxbury (Mass) Home for Aged Couples \$3 000 and after private bequests the residue of the estate in equal shares to the Boston Floating Hospital the Florence Crittenton League of Compassion the Massachusetts Society for the Prevention of Cruelty to Children the Industrial School for Crippled and Deformed Children the Boston Nursery for Blind Babies the Perkins Institution for the Blind the Frances E Willard Settlement and the Episcopal City Mission by the will of Elizabeth Goldthwait Pierce of Newton Mass In each instance a permanent fund to be known as the John Goldthwait Fund is to be established in memory of Mrs Pierce's father

St Francis Hospital Santa Barbara Calif \$3 000 by G O Knapp \$1 000 anonymously and \$200 by Mrs Milton Robbins

Burgett Hospital Dillon Mont a 7 1/4 acre site valued at \$2 000 by the State Bank of Dillon and a large sum by Mrs William Roe

Chelsea (Mass) Memorial Hospital and the Chelsea Day Nursery each \$1 000 under the will of Edwin R Hogg

Beth Israel Hospital New York, \$1 000 by the will of Israel W Schenker

Institute for Tuberculosis Denver and the Institute Maer Bell Hanes at Jerusalem Palestine each \$200 under the will of Dr Adolph Harkovitz of Uniontown Pa

City Memorial Hospital Winston Salem N C radium for the treatment of patients by Bowman Gray of Winston Salem

LATIN AMERICA

New Argentine Hospitals—A new tuberculosis hospital was recently opened at Cordoba—Work has already begun on the new hospital at Miramar

Funds for Brazilian Hospitals—An annual appropriation of 6 000 contos (more than \$700,000) was recently approved by the Brazilian Congress for maintenance of hospitals in Rio Janeiro Repair and reequipment of several hospitals are already under way

Cuban Society Elects Officers—The Villalarga Medical Society elected recently the following officers president, Dr Olinio Lubian, vice president, Dr Tomas A Etchandy, treasurer, Ramon Lorenzo, secretary, Oscar Esparza Dr Lubian the president-elect, is also the editor of *Villalarga Medica*

Mexican Welfare Society—This society has charge of funds in the federal district and twenty-two out of the twenty-eight states amounting to about 65,000,000 pesos The income from these funds is used to support twenty-six homes, six foundling homes, three dispensaries, five old people's homes, ten schools, seventy-one hospitals, four insane asylums and fifty other institutions The number of inmates is 15,699

Yearbook of a Child Welfare Association—El Patronato Oficial de la Infancia of Chile has published a most elaborate 250 page yearbook for 1923, reviewing its activities Functions available in the fiscal year 1922 amounted to more than 613 000 pesos and about 555 000 pesos was spent The society supports eleven milk stations, a home for mother and child, an infant clothing shop and a diet kitchen, and will support a maternity home (in construction) It has a capital of more than 1,400 000 pesos The yearbook is a complete record as well as an entertaining volume Besides descriptions, illustrations and personnel of all the hospitals and dispensaries at Santiago, the book contains material of general interest

FOREIGN

International Congress on Comparative Pathology—On foreign exchanges state that the second International Congress on Comparative Pathology is now definitely announced to meet at Rome Oct 7 to 14, 1923 Seventy communications have already been listed Prof E Perroncito, 40 Corso Valentino Turin, is in charge

Federation of Scientific Societies in Belgium—The *Liege medical* relates that delegates from all the chemical, medical, mathematical and other scientific societies of Belgium recently convened at Brussels The president of the federation is Professor Stockis of Liege and the secretary is Dr Renaux of the Pasteur Institute of Brussels

Appeal for Candidates for Fellowships—The *Nederlandsche Tijdschrift* publishes an appeal for candidates for the fellowships offered by the scientific committee of the Netherlands-America Foundation Netherlands university students or recent graduates who may wish to study for a year or less in the United States are asked to present their credentials to Prof H A Brouwer at Delft The number of scholarships is small

The League Against Syphilis—The first meeting of the international league against social disease was held in Paris February 25, under the presidency of M Barthou The queen of Belgium, founder of the league was represented by the Belgian ambassador A world-wide campaign will be conducted against venereal disease in the near future, it was announced The official title of the organization is the League Against Syphilis

Importation of Foreign Drugs Into Roumania Regulated—A recent order issued by the ministry of public welfare forbids the importation and sale of foreign drugs in Roumania except under the following conditions

The manufacturers must apply in writing for a license and state the value quality and quantity of their drugs

Chemical analysis of the drug must be performed by a competent analyst whose certificate must be attached to the letter of application together with an official certificate to show that the sale of the drug is permitted in the country of its origin

Every package must be labeled in Roumanian with the name and formula of the preparation and each application must be accompanied by ten samples of the drug

Multiple Sclerosis in Switzerland—The neurologists of Switzerland who have long been impressed with the prevalence of multiple sclerosis in that country, have induced the public health authorities to aid them in a collective inquiry on the subject Questionnaires are to be sent to all practitioners of medicine for information as to the prevalence of

the various types of the disease, but especially the type suggesting spastic spinal paralysis, which is the most common form in Switzerland

No Reciprocity Between Hungary and Roumania—Roumania announced in 1922 that Hungarian medical diplomas would not be acknowledged in Roumanian territory, as a reprisal, for Hungary's long standing failure to recognize diplomas from the universities of Roumania. This has seriously affected hundreds of students in the newly acquired parts of Roumania. In the University of Cluj, where formerly the Hungarian language was used the Roumanian language has been adopted. The advanced medical students who could not learn Roumanian and carry on their studies at the same time, went to the University of Budapest to finish their education and obtain their medical diplomas. Now, on returning to their homes, they find themselves prohibited from practicing although their own language is still spoken in Transylvania, where even the Hungarian laws are still in force.

Russia's Biologic Crisis—In his report on 'Epidemics in Russia Since 1912' Professor Tarasewich states that Russia will be fortunate if she emerges from the present crisis with the loss of only 20 per cent of her population. The crisis is described as not only political and economic but also biologic, because of the disturbances which it has caused in the domain of human physiology and pathology. Not only are epidemic diseases, such as typhus, relapsing fever, intestinal infection, malaria and scurvy, which have always existed in Russia, aggravated both in prevalence and in virulence, but nearly all other epidemic infectious diseases have been greatly increased, hitherto unknown diseases have been observed, and there has been an extension of many noncontagious diseases such as disorders of the nervous system and the heart and general functional disorders. Behind all this stands the famine, which has caused millions of deaths, and has lowered the stamina and physical standards of the whole Russian race.

Personal—Dr Pasteur Vallery-Radot, grandson of Louis Pasteur, gave a lecture before the Royal Society, London, February 2 in connection with the Pasteur centenary. Dr Vallery-Radot is touring England in commemoration of the centenary, under the supervision of the Alliance Française. —By resolution of the Royal College of Physicians, London, the name of Dr David A. C. Pearce has been expunged from the list of licentiates.—Prof Grafton E. Smith delivered the Montgomery Lecture before the Royal College of Surgeons of Ireland, January 29.—Dr Leon Bernard of the University of Paris, secretary of the National Antituberculosis Association of France, arrived in America recently, to study American health methods.—Prof Camillo Golgi has been given an honorary degree by the Paris medical faculty.—Prof T. Weiss was recently presented with a souvenir tablet on the occasion of his retirement from the chair of clinical surgery at Nancy, having reached the age limit.—Dr F. Ingerslev of Saxkøbing, Denmark, has been elected to membership in the Union internationale contre la tuberculose.—The Academia de Medicina at Madrid recently unveiled a tablet bearing a tribute to the efforts and long service of the librarian, Dr Fernandez Caro, senator and president of the Spanish Hygiene Society.—An album with more than 1800 signatures was presented to Professor Recasens of Madrid, with an address expressing gratitude for his work as dean of the medical school. He is credited with having initiated the interchange of university professors and numerous improvements in technical equipment.—The *Medicina Ibera* relates that the city authorities of Zaragoza presented Dr Martinez Vargas with a gold medal. He is professor of pediatrics at Barcelona and a leader in welfare work for children.—Dr Sieur, the medical inspector general of the French army and president of the medical consulting staff in the ministry of war, was given an ovation recently as he left the service, having reached the retiring age. Vincent is his successor.

Deaths in Other Countries

Dr James Ritchie, Irvine professor of bacteriology at the University of Edinburgh, January 28.—Dr Thomas Wood of Edinburgh at Lisbon, Portugal, January 24.—Dr J. W. Ballantyne, lecturer on midwifery and gynecology to the School of Medicine for Women, Edinburgh, past president of the Edinburgh Obstetrical Society, fellow of the American Association of Obstetricians and Gynecologists and honorary member of the American Child Hygiene Association.—Dr Thomas Higgins was assassinated at his home at Mary-

borough, Ireland, February 12.—Dr Oscar Freire, professor of legal medicine at Bahia who has been giving a course of lectures in the S. Paulo medical school, died recently at S. Paulo, aged 42. He was the founder of the Sociedade de Medicina Legal at Bahia and a frequent contributor to scientific literature.—Dr F. La Torre, professor emeritus of obstetrics at the University of Rome, author of several textbooks, founder and director for twenty-five years, of the *Clinica Ostetrica*, aged 76.—Dr A. Testaz of Berne, Switzerland, aged 64.—Dr A. Roskam of Liege, president of the Societe medico-chirurgicale and author of works on internal medicine and neurology.—Dr Isidro Giol de Diego, at Madrid.—Dr Ernesto B. Salvá of Santa Fe, Argentina, aged 58.—Dr V. Chirivino, instructor in skin diseases and syphilis at the University of Naples and a frequent contributor to the literature of these specialties, aged 53.

CORRECTION

Expansion of New York Academy of Medicine—Dr W. G. Thompson writes that the announcement made in a recent issue of THE JOURNAL under the heading 'Expansion of Academy of Medicine' should be corrected to read as follows: The Rockefeller Foundation has not contributed \$1,000,000 for the new building but has given approximately that sum toward maintenance of the academy and expansion of its educational work. The Carnegie Corporation has contributed the cost of the new building to the extent of \$1,000,000. Thus the academy of medicine furnishes the land, the Carnegie Corporation the building, and the Rockefeller Foundation the endowment.

Government Services

Aviation Examining Units Authorized

Pursuant to instructions of the Secretary of War the organization of the following aviation physical examining units organized reserves has been authorized: Aviation Physical Examining Unit No. 6 (a New Jersey state unit), No. 7 (Tennessee), No. 10 (Iowa), No. 14 (Tennessee), No. 15 (Pennsylvania), No. 2 (California) and No. 5 (California).

Survey Vessels to Have Medical Officers

The House of Representatives acted favorably, February 19, on the bill providing medical and hospital supplies for the officers and seamen of the Coast and Geodetic Survey. By the terms of the bill, the U. S. Public Health Service is authorized to detail a medical officer on each of the vessels of the survey while at sea. The bill passed without a record vote, and went to the Senate.

First Class in Physiotherapy Graduates

The first class in physiotherapy at Walter Reed General Hospital, Washington, D. C., was graduated February 7. Dr Frank B. Granger, lieutenant colonel, M. O. R. C. Boston, spoke on the development of physiotherapy, emphasizing the effect the World War had in placing physiotherapy on a scientific basis. Surg. Gen. Merritt W. Ireland presented the certificates of proficiency. The graduates, with a single exception, have accepted appointments as reconstruction men in U. S. Army hospitals.

Director of Veterans' Bureau Appointed

The President has nominated Brig. Gen. F. U. S. Army, retired, Washington, D. C., director of the Veterans' Bureau, succeeding Col. Charles C. Resnais, who resigned recently. Brigadier General H. C. H. transportation service during the World War.

Additional Appropriation for

Representative J. C. [unclear] of [unclear] House Committee on [unclear] announced that [unclear] necessary for [unclear]

abled war veterans This statement was made after Chairman Langley had conferred with President Harding on the subject The proposed \$5,000,000 appropriation is in addition to the \$17,000,000 recently carried in the so-called second Langley bill, which has already been expended or authorized to be expended for hospitals now under construction An urgent need for more money exists, according to Congressman Langley, who indicated that the President had given his sanction to whatever additional appropriations are necessary

Foreign Letters

PARIS

(From Our Regular Correspondent)

Feb 2, 1923

To What Extent the Sending of Pamphlets May Constitute Illegal Practice of Medicine

A Lyons herbalist became the proprietress of a botanical laboratory in which the medicinal decoctions (tisanes) of an abbe were manufactured She solicited clients by means of circulars and advertisements in the public press, in which she advised patients suffering from any one of twenty diseases enumerated to begin the use, if they wished to recover, of the medicinal decoctions recommended in a pamphlet, giving twenty modes of treatment, of which the abbe was the author and which was furnished gratis to all persons requesting it In response to letters, the herbalist sent out an advertising pamphlet, the cover of which bore a picture of the abbe, and the preface of which was signed by him as evidence of his endorsement The results of a therapeutic method which consisted in the use of the medicinal decoctions of the abbe were set forth with extravagant praise The cost of the various modes of treatment was plainly stated, and the treatment that should be followed in each type of disease was specified

The profits realized from the sale of these medicinal decoctions amounted to about 150,000 francs a year The abbe who was not a doctor of medicine, had granted to the herbalist in return for the payment of certain sums monthly, the right to use his name and also to prepare and sell the medicinal products that were manufactured according to his formulas It was likewise with his authorization that the pamphlet had been edited, published and distributed When the charge of practicing medicine illegally was brought against them, the abbe and the herbalist set up in their defense the facts that they had made no examination of their patients, and that no written prescription had been given in connection with the application of the appropriate treatment The court of cassation (the highest court of France) refused to accept this interpretation of their acts, and set forth that the law does not state that examination of the patient and the mode of writing used in prescribing treatment are the pivotal considerations in respect to the charge of practicing medicine illegally This court decided that a misdemeanor had been committed, since with the foreknowledge of the abbe the herbalist gave instructions to patients and participated habitually in the treatment of their diseases While it is true that advice given in a general way, in a book or pamphlet, in regard to the care to be accorded patients does not constitute in itself illegal practice of medicine, the case is different when certain care and treatment are prescribed for a patient individually and in a specific instance The circumstance that made it possible for the court to uphold the charge that a misdemeanor existed is the fact that personal letters were addressed to the patients in which the cost of treatment was stated and in which the treatment to be observed was specified

Photogenic Properties of Cocain

Dr G Salles calls attention to a cause of cocaineomania which does not seem to have been pointed out heretofore, namely, the use of cocaine by motion picture actors to increase the photogenic capacity of the eyes The resulting increase of ocular tension and the dilatation of the pupil give to the eyes and to the face of the artist an expression of astonishment, depth and brilliance, and sometimes of wildness It goes without saying that this use of cocaine, instead of enhancing the gifts of the actor, soon develops a mania, and induces degradation of character and the loss of the fundamental qualities of an artist

Voice of Opposition Against Secret Remedies

The Societe de therapeutique adopted recently the following resolution

The Societe de therapeutique cannot preserve its character as a great scientific society unless it refuses to act in any way that seems to accord its patronage to private interests Consequently, it has decided to return to the practice adopted previous to 1914 and henceforth it will not accept from its members nor allow its members to present any communications that deal with therapeutic products the chemical formula of which is unknown or in the case of galenicals, if the quantitative formula is not made public

Protection of the Professional Reputation of a Physician

Suit was recently brought against an oculist of Dijon by the father of one of his patients to collect 100,000 francs damages for a grievous error, alleged to have been committed by the oculist, which resulted in the enucleation of the patient's eye The medical experts, in their testimony, declared that there was no evidence that the oculist had neglected the dictates of common sense, but that, on the contrary, his actions were in conformity not only with prudence but also with the guiding principles of science both as regards the establishment of the diagnosis and the application of treatment he had adopted a line of conduct that was absolutely normal and in accord with recognized medical standards In view of this testimony the plaintiff expressed a willingness to withdraw his complaint, but the oculist set up a cross-action against the plaintiff and demanded an award in his own favor The court of Dijon approved the oculist's claim, and required his opponent to pay the physician, by way of damaged interests, the sum that he had demanded The decision of the court was based on evidence that the plaintiff in the primary action had not confined his charges to the imputation that the physician was guilty of a characteristic professional error, but without necessity, he had accused the defendant of "having carried out the examination of the patient with haste and an unjustifiable precipitation, of having committed a grave error and of having been guilty of gross negligence, such as would constitute, aside from all questions of medical theory and method evident incapacity and neglect of the rules of sound reasoning and prudence such as any ordinary human being is supposed to apply" The court regarded these affirmations as a malicious endeavor to injure the physician's reputation To be sure, the law permits one to injure the reputation of others if it is done in the exercise of one's own individual rights A patient is entitled to bring complaint against his physician, but, in defaming him without necessity, he exceeds his rights The rights of the patient cease where the rights of the physician begin The physician, too, is entitled to protection against imputations of such a nature as will reflect on his character as a professional man and will be certain to awaken a prejudice against him

Propaganda for Remedies Against Tuberculosis

All physicians of Paris, and doubtless also those in the provinces received recently a bulky package on which was inscribed in large letters "The Fight Against Tuberculosis" Great was their disappointment when on opening the package they found only a stock of pamphlets vaunting the treatment

of tuberculosis with endotine the "Gabrilovitch purified tuberculin," which, according to these brochures was a "veritable specific remedy against tuberculosis." But what was more serious, in a daily paper there appeared a long article entitled "A Light in the Darkness Determining the Direction of the Fight Against Tuberculosis." This extolled the great merits of the Gabrilovitch tuberculin and tended to make the general public believe that this tuberculin is at last a truly therapeutic and a truly specific remedy against tuberculosis. And how could the general public refuse to believe these affirmations when there appeared, under the article in question the signature of Prof. Gabriel Petit of the Academy of Medicine. The public does not know that Gabriel Petit is a professor in a school of veterinary medicine.

MADRID

(From Our Regular Correspondent)

Jan 18 1923

Epidemic Infantile Paralysis in Madrid Province

Dr. Lafora has published an article on an epidemic of infantile paralysis occurring not far from Madrid. So far no epidemics had been reported in Spain although some small outbreaks such as the one reported by Dr. Fernandez Sanz at Manzanares, Ciudad Real in the summer of 1917 had attracted attention. The outbreak now described is worthy of notice both because of its being so near Madrid and because of its continuing to spread. It began about three weeks ago among the children in Chinchon. Dr. Lafora has seen three cases personally and has heard of six new cases in the last few days. No deaths have been reported but the paralysis has persisted over twenty days in a number of cases. Dr. Lafora's article contains a brief account of the disease symptoms and treatment including Rosenow's advice as to the administration of immune horse serum. The authorities have heeded Dr. Lafora's report and have adopted measures to prevent the spread of the disease.

Dr. Madinaveitia's Death

Dr. Jose Madinaveitia noted for his constant efforts on behalf of labor died recently at Bilbao his home town. He lost his immense practice in the Basque provinces on deserting the Basque nationalist party for international socialism. Even his own people repudiated him. He then closed his office and devoted his science, his money and all his energies to a medicosocial campaign among workers. At Bilbao he created a garden for convalescents, changing a barren hill into an inviting resort and organized libraries, lecture halls and cooperative societies. When the famous mining strike took place at Vizcaya Madinaveitia immediately began making provision for the strikers' children that the parents might better stand the conflict. He took whole trainloads of children to Bilbao. The strikers however showed him no gratitude for this action. When his efforts at political reform failed, he went back to his practice as he also went back to his former church when about to die.

Increase of Students and Decrease of Professors in Spanish Schools

Dr. Eleicegui, editor of *España Medica*, has published an article protesting against the alleged greed of professors in medical schools. The number of medical students already too large continues to increase and the school rooms are overcrowded. In some classes the enrolment exceeds 600 or 700, and, to aggravate the situation the teaching personnel is diminishing. The professors taking advantage of a law intended for other government employees and aiming to exclude professors from its operation have devised what is called "la martingala" or combination of chairs. When a vacancy occurs instead of appointing a new professor one

of the old incumbents is appointed and he is thus entitled to receive a 50 per cent salary increase for filling two chairs. Thus through a false sense of economy courses already inadequate through the lack of sufficient professors are poorly taught as the one professor who could not attend properly to one subject attempts to present two.

The fault lies with the secretaries of education who have shown lack of strength in addition to favoritism on such occasions. On the one hand they have allowed their friends to occupy several chairs, so that they may collect several salaries, and on the other hand they have exempted students from compulsory attendance. There is no question that teaching in Spain has suffered a serious setback since examining boards have been discontinued and the passing marks left to the discretion of each professor. The result has been an enormous decrease in the number of failures and a flood of brand new physicians pouring out every year. Thus, we are preparing a medical proletariat really pitiable because of both its incompetence and the hard struggle it must make to earn a living.

Neumann Discusses Tone and Rhythm

In an interesting lecture before the National Academy of Medicine Neumann of Vienna recently discussed the physiologic relationship between the static and the acoustic portions of the internal ear which, in his opinion parallel the anatomic relationship. He tried to show that Ewald's muscular tonus property is under the influence of acoustic impressions. To prove it he described rhythm and musical sensations in man and explained through them why we derive different impressions on hearing music played either rapidly or slowly on an organ. The cause of both the psychic and the physical effect produced by music must be traced to the anatomic relation between the static and the acoustic labyrinth. There is as close a relationship between the nerves that traverse the two as among their respective original nuclei. Tone, rhythm, harmony and melody were discussed by the lecturer. He charmed the audience with his description of how rhythm by stirring the static labyrinth favors muscular tonus. He recalled that even among the deaf who receive only subjective sensations muscular tonus is superior to that possessed by those who cannot hear any sound at all. The oldest musical instrument the drum, according to Neumann, was originally just a mortar covered with skin the rhythm of work fusing with the rhythm of music. At the beginning music, song and dance were inseparable their exciting influence being so marked that primitive races and later savages danced and sang to certain simple but rhythmic tunes exacting such muscular effort as to tire them out.

Spanish Universities Go on Strike

The Spanish universities have gone on a strike, an unprecedented event in Spain and perhaps in the whole world. The deans of the different faculties at meetings presided over by the university rectors decided to close the schools until the superior police chief resigned. Because of ominous rumors created by the students' police forces were mobilized. The students from other schools invited their medical colleagues to join in the protests but met with a refusal. It so happened that at that very moment through some blunder the police charged the students clearing out both those willing and those unwilling to attend school. On the next day a policeman passed the medical school in a patrol car, some students insulted him. The officer drew his revolver and wounded four students. On the pretext that the police acted on orders from the chief of police rector, the professors decided to close the schools until the police was dismissed. This happened three days ago. There is a charge of administrative mismanagement. The minister of education

professor, struggling between his duty to enforce the law and his wish to stand with his school associates, solved the difficulty by extending the length of the course for as many days as the strike might continue

BERLIN

(From Our Regular Correspondent)

Feb 3, 1923

Proposed Reforms in the Medical Curriculum

In 1918, a movement (to which I have frequently referred) was launched to bring about certain reforms in the medical curriculum in Germany. Through the transactions of the special commission appointed by the government, which met in Berlin the end of November, the movement has taken on a more tangible form and the problems have been brought nearer to a solution. The commission was composed of representatives of the medical faculties of the various German universities, the medical profession, medical students, medical societies and health insurance societies, together with delegates of the governments of the several states constituting the commonwealth. The results of the manifold deliberations of the commission may be summed up thus. The course of medical study shall be lengthened and shall comprise twelve semesters in place of ten. The *'praktische Jahr'* (the year devoted to the practical application of previously gained theoretical knowledge), which has been quite generally opposed by the medical faculties, is approved for continuance, since the majority of the representatives, in harmony with the views of all the representatives of the medical profession, held that the *praktische Jahr* afforded future medical practitioners the sole opportunity of developing independent initiative under conditions in which they were thrown on their own resources, a matter of great importance in the practical training of physicians. In further extension of the idea of practical training, it was definitely recommended that all medical students should serve for an uninterrupted period of six months as "famulus," or assistant. This period of assistantship must not interfere with clinical instruction. Considerable latitude should be left to the students as to the exact manner of satisfying this requirement, the sole restrictions being that the whole period of assistantship may not be served during vacations, and that it may not be served before the seventh semester of study. The period of assistantship shall be utilized for practical training in internal medicine, surgery, obstetrics, and gynecology in general. The *praktische Jahr* should follow the final medical examination. Training in internal medicine and in obstetrics is compulsory. The remainder of the *praktische Jahr* however, shall be open to a wide range of choice, especially in view of the fact that many future medical practitioners intend to serve, for a time, in institutes devoted to scientific research, and likewise because there is a pressing demand from such institutes for more assistants. From one to two months of the time required for internal medicine may be spent on children's diseases. Only two examinations will be given, as heretofore throughout the course the premedical examination and the final medical examination at the end of university instruction. Five semesters of study shall precede the premedical examination and the further requirement is set up that during the fifth semester certain propedæutic clinical subjects, such as pharmacology, general pathology or bacteriology shall be studied in preparation for the clinical subjects to follow. More thorough instruction in physiology seems eminently desirable, and a course in physiologic chemistry including laboratory work is recommended. A period of service, during the first semesters, as attendants on the sick, which was demanded from many quarters was not approved it being held that such training might better be reserved for the

period of assistantship during the later semesters. The proposal to divide the final medical examination into two parts, one bearing more particularly on the natural sciences and the other on anatomy and physiology, was rejected by the commission. Training in the mounting of anatomic specimens shall, as heretofore, be given in two semesters, and the time devoted to the refinements of the subject shall be further restricted. The suggestion that botany and zoology be combined into a biologic lecture course and a test in biology was rejected. As heretofore, in a number of important clinical lecture courses attendance shall be compulsory, and evidence of attendance must be furnished. Evidence of attendance on courses in social medicine and in legal medicine and medical jurisprudence must also be secured. Lecture courses in pathologic physiology, psychology and social hygiene should be added to the medical curriculum. In the future, the premedical examination and likewise the final medical examination may be tried by candidates only twice, and the second test must be held before a collegiate body. The length of the final medical examination should be considerably shortened.

Now that the government commission has reported its recommendations, the preliminary work toward the revision of the medical curriculum would seem to have been accomplished. The next step in the procedure will be for the ministry of the interior, as the competent board of control in this case, to draft a bill giving consideration to the changes proposed by the commission, which will be acted upon in turn by the *Reichsrat* (council of the empire or commonwealth), in collaboration with the representatives of the several federated states.

Health Insurance

In the reichstag committee on social politics it was decided, January 18, to raise to 2,400,000 marks the fixed annual income below which all persons must secure health insurance in the health insurance societies. The health insurance societies of Berlin are so far in arrears in the payment of fees due to physicians that the fees for service rendered in October were paid only a few days ago. So far, the physicians have received only about 16 per cent of their fees, and this occurs at a time when the sum received represents only a fraction of the buying power it had at the time the service was performed. It is stated that 440 million marks in fees due physicians are in arrears. It will be readily understood that, under such circumstances, many physicians state they have not the funds with which to buy the food their families need.

Establishment of Prussian Subdepartment of Physical Education

In the Prussian ministry of public instruction a new subdepartment of physical education has just been established. The Prussian ministry of public welfare has also created a subdepartment of juvenile welfare, including physical training. A council on juvenile welfare and juvenile welfare movements, including physical training, has been formed, with six special committees to deal with the various phases of the work.

Help for Tuberculous Children

Through the collection of a large sum of money in foreign countries, it has become possible to supply supplementary food to about 20,000 children who are either tuberculous themselves or are exposed to the disease through tuberculous members of the family. The selection of applicants and the distribution of food take place only through the municipal welfare station for the tuberculous, the Landesversicherungsanstalt of Berlin and the welfare station for the tuberculous at the Charité Hospital. The administration of the welfare

work is in the hands of the *Hauptgesundheitsamt* (central public health office) and the *Jugendamt* (child welfare bureau) of the city of Berlin. In Norway a special fund has been raised for the purchase of cod liver oil and the welfare stations for the tuberculous in Greater Berlin will soon be in a position to distribute this valuable gift.

PRAGUE

(From Our Regular Correspondent)

Feb 1 1923

Pasteur Centenary

January 18 the official celebration of Pasteur's centennial anniversary took place in Prague at the Charles University. The ceremony was opened by the rector of the faculty, Prof. C. Horacek, and by the dean of the medical faculty, Prof. C. Weigner, in the old university hall. The senior of the medical faculty, Prof. J. Hlava, afterward gave a lecture on the importance of Pasteur's discoveries in the development of the medical sciences. He is one of the few Czech scientists still living who knew Pasteur personally. The lecture of Prof. I. Honl followed on the doctrine of Sacharow, who tries to defend the theory of spontaneous generation sixty years after Pasteur's discoveries. The ceremony was attended by the minister of public health, the Reverend Dr. Sramel, the

situation during the war was appalling and control of the milk supply was virtually suspended because the city authorities were glad to see milk coming to Prague no matter how bad it was. During the two years that have elapsed since the close of the war the supply of the city has again become normal but the adulteration of the milk to which the dealers had become accustomed apparently continued. The two laboratories for the control of food inspected all the stores where milk was sold in July 1922 and found the milk adulterated in about three fourths of them. When inspections were made the second and third times the number of cases in which the milk was found below the standards admitted by the food laboratory fell to 4 per cent. Nevertheless the situation cannot be considered satisfactory because the standards which the laboratory for food control recognizes are altogether too low. No bacteriologic examination of the milk is made, purely chemical analyses being depended on. The lowest percentage of fat that is accepted by the food laboratory is 2.8 which is undoubtedly too low. It is the purpose of the study now under way to determine the fat content of the milk as it is produced in the country and to ascertain the hygienic conditions under which the milk is being produced and transported to the city. Bacteriologic control of the milk will be largely depended on in judging these conditions.

Deaths

Julius Parker Sedgwick * professor of pediatrics and chief of the department of pediatrics at the University of Minnesota Medical School since 1915, and professor of pediatrics at the University of Minnesota Graduate School of Medicine, Minneapolis, died, February 25, at his home in Minneapolis, following a prolonged illness. Dr Sedgwick was born in Wrightstown, Wis, in 1876. He received the degree of bachelor of science from the University of Nebraska in 1896 and of doctor of medicine from Rush Medical College, Chicago, in 1899. Following his graduation he served as intern at Alexian Brothers' Hospital, Chicago, and later was made assistant physician at the Fabiola Hospital, Eveleth, Minn. During the World War, Dr Sedgwick was commissioned a major in the Medical Reserve Corps and served in France with the American Red Cross by which he was appointed to work out a health program for children and mothers who had lived in the war zone for three years. On his return to America in 1918 he was named consulting hygienist on pediatrics to the Surgeon General, U S Public Health Service. At the same time he also was engaged in an investigation of the relative merits of natural and artificial infant feeding in connection with clinical work at the University of Minnesota. Dr Sedgwick was a member of the American Pediatric Society, the Chicago Pediatric Society and the Central States Pediatric Society. He was a contributor to American and European journals on diseases of children and recently edited a translation of Feer's "Text Book of Pediatrics."

George Albert Hayes Smith, Freeport, N Y, Long Island College Hospital, Brooklyn, 1898, member of the Medical Society of the State of New York, formerly assistant professor of diseases of the eye at his alma mater, at one time on the staff of the Brooklyn Eye and Ear Hospital, Brooklyn, aged 46, died, February 10, at the Post-Graduate Hospital, New York, from pneumonia, following an operation for biliary calculi.

Alfred Nathan Strouse * New York, Medical Department of Columbia College, New York, 1885, member of the American Academy of Ophthalmology and Oto-Laryngology, and the New York Academy of Medicine, on the staff of the City Hospital and of the Asylum of St Vincent de Paul, aged 59, died, February 12, following an operation for strangulated hernia.

Israel J Desroches, Montreal, Que, Canada, University of Montreal Faculty of Medicine, Montreal, 1877, at one time president of the Medical Society of Montreal, and corresponding member of the Societe des sciences physiques, naturelles et climatologiques d'Alger, and the Societe française d'hygiene de Paris, died recently, aged 72.

Louis Henry Jacob * Philadelphia, Medico-Chirurgical College of Philadelphia, 1901, member of the American Urological Association and the Philadelphia Genito-Urinary Society, on the staffs of the Jewish and Polyclinic hospitals, aged 43, died, January 8, from appendicitis.

Daniel Louis Humfreville, Pasadena, Calif, Rush Medical College Chicago, 1896, member of the Medical Society of the State of California, formerly professor of physiology at the Emsworth Medical College, St Joseph, Mo, aged 48, died, February 8, from heart disease.

Elmor E Morris, New Haven Ind, Eclectic Medical Institute, Cincinnati, 1902, member of the Indiana State Medical Association, aged 54, was instantly killed February 4 when the automobile in which he was driving was struck by an interurban car.

John Weldon, Willimantic Conn, New York University Medical College New York, 1883, at one time member of the faculty of Fordham University New York, and president of St Joseph's Hospital, aged 64, died, February 18, from pneumonia.

Douglas Adair White, Syracuse N Y, College of Physicians and Surgeons Baltimore 1887, member of the Medical Society of the State of New York, formerly superintendent of the Hospital of the Good Shepherd, aged 62, died, February 1.

Louis Nishawitz, Hackensack N J, Long Island College Hospital Brooklyn 1922, intern at the Hackensack Hospital,

aged 24, was instantly killed, February 16, when the ambulance in which he was riding was struck by a train.

Frank B Morgan, Huntington, Ind, Medical College of Indiana, Indianapolis, 1897, member of the Indiana State Medical Association, for fifteen years county coroner, aged 53, died suddenly, February 5, from heart disease.

Theodore Carroll Griest * Put-in-Bay, Ohio, Starling-Ohio Medical College, Columbus, 1913, aged 33, was drowned, February 17, when the automobile in which he was driving fell through the ice on Lake Erie.

Henry Latimer Rudolph * Gainesville, Ga, University of Maryland School of Medicine, Baltimore, 1902, served in the M C, U S Army, with the rank of captain, aged 43, died, January 28, from pneumonia.

Carl John Larson * Negaunee, Mich, University of Michigan Medical School, Ann Arbor, 1904, served in the M C, U S Army, during the World War, with the rank of captain, aged 41, died, January 11, from uremia.

Cora B Murdock Palmer * Logansport, Ind, University of Toronto Faculty of Medicine, Toronto, Ont, Canada, 1906, member of the American Psychiatric Association, aged 37, died, January 26, from pernicious anemia.

James R Scott, Edgewood, Ill, Cincinnati College of Medicine and Surgery, 1863, Civil War veteran, practitioner of Edgewood for more than half a century, aged 82, died, February 8, from senility.

Albert I Lawbaugh * Calumet, Mich, Long Island College Hospital, Brooklyn 1870, president of the Michigan State Medical Society, 1908-1909, aged 78, died, February 15, from carcinoma.

Thomas J Kennedy, Coolidge, Ga, Memphis Hospital Medical College, Memphis, Tenn, 1887, member of the Medical Association of Georgia, aged 60, died, February 8, from heart disease.

Oscar Von Barandy, South Bend, Ind, University of Budapest, Hungary, 1900, member of the Indiana State Medical Association, aged 45, died, February 8, from cerebral hemorrhage.

George H Wuchter, Wadsworth, Ohio, University of Pennsylvania School of Medicine, Philadelphia, 1880, veteran of the Spanish-American War, aged 63, died, February 3, of chronic nephritis.

George Snow Fortier, Chicago, College of Physicians and Surgeons, Chicago, 1907, member of the Illinois State Medical Society, aged 51, died, February 20, from pneumonia.

Alfred O Strout, Parkersburg, Iowa, Chicago Medical College, Chicago, 1875, member of the Iowa State Medical Society, aged 73, died, February 13, from pneumonia.

William Henry Nusbaum, Indianapolis, Miami Medical College, Cincinnati, 1881, formerly state senator, aged 66, died, February 8, following a long illness.

Carl Frederick Bachmann, Neillsville, Wis, Jefferson Medical College of Philadelphia, 1896, also a druggist, aged 48, died suddenly, February 2.

Wilfrid Henry Chevette, Holyoke, Mass, University of Montreal Faculty of Medicine, Montreal, Que, Canada, 1903, aged 44, died, January 26.

Cassius W Gould, Chicago, University of Buffalo (N Y) Department of Medicine 1872, aged 72, died, February 20, from pneumonia.

Joseph Oliver Balcar * West Franklin, Ill, Rush Medical College Chicago, 1918, aged 30, died, February 12, from appendicitis.

Thomas J Shuell * Cedar Rapids, Iowa, State University of Iowa College of Medicine Iowa City, 1880, aged 69, died, February 15.

A Minnie Russell, Speer, Ill, Woman's Medical College of Baltimore, 1896, aged 58, died, February 6, from pneumonia.

Leota S Cunningham, Tulsa Okla, Hahnemann Medical College and Hospital of Chicago, 1907, aged 48, died, February 7.

William Eben Ireland * Washington C H, Ohio, Starling Medical College, Columbus 1882, aged 70, died, February 8.

Charles Summer Judy * Miamisburg, Ohio, Medical College of Ohio, Cincinnati, 1887, aged 61, died, February 5.

Franklin Pierce Tyler, Galesburg, Ill, Rush Medical College Chicago, 1885, aged 68, died, February 7.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNALS BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

MORE MISBRANDED NOSTRUMS

Abstracts of Recent Notices of Judgment Issued by the
Bureau of Chemistry of the United States
Department of Agriculture

Vita Oil—Loring J. Barker of Berkeley, Calif., who did business as the Vita Oil Co., shipped in August, 1917, a quantity of this product from California to Indiana which was misbranded. The Bureau of Chemistry analyzed this preparation and reported that it consisted essentially of non-volatile vegetable oil, mineral oil and volatile oils, including turpentine, clove, and cinnamon oils with extractives of red pepper and pepper. The product, which was labeled in part "Dr. Smith's Caloric Vita Oil," was falsely and fraudulently represented as an effective treatment, remedy and cure for diphtheria, pneumonia, croup, rheumatism, weak joints, colic, lumbago, earache, painful menstruation, caked breasts, diarrhea, lockjaw, itch, spinal meningitis and many other conditions. In September, 1920, Loring J. Barker pleaded guilty and was fined \$100—[Notice of Judgment No. 10940, issued Jan. 4, 1923]

Gold Medal Brand Sexual Pills—The S. Pfeiffer Mfg. Co., St. Louis, Mo., shipped in October, 1920, a quantity of this preparation that was misbranded. The federal chemists reported that analysis showed the pills to contain phosphorus and extracts of damiana and nux vomica. The statements regarding the curative effects of the pills appearing on the labels of the boxes and cartons were false and fraudulent, as the preparation contained no ingredient or combination of ingredients capable of producing the effect claimed. In May, 1921, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[Notice of Judgment No. 10864, issued January, 1923]

Lovett's Pills—A quantity of "Dr. Lovett's Pills" invoiced by Dr. Lovett Medicine Co., New York City, were shipped from New York to Los Angeles in November, 1921. The Bureau of Chemistry reported that analysis showed the pills to contain iron, sodium, and potassium carbonates and sulphates with traces of plant extractives. Among the claims made on or in the trade package for this preparation were:

This purifier of the blood is the only infallible specific to cure radically and permanently general debility, headache, rheumatism, sexual debility, sterility, malarial fevers, diseases of the liver, syphilis, scrofula, etc.

These and a number of equally wild claims were declared false and fraudulent and in June 1922 judgment of condemnation and forfeiture was entered and the court ordered that the product be disposed of in accordance with the provision of the Food and Drugs Act—[Notice of Judgment No. 10869, issued January, 1923]

Savanol—G. P. Steinh, St. Louis, Mo., shipped in May 1921, from Missouri to California a quantity of "Savanol" which was misbranded. The federal chemists reported that analysis showed Savanol to consist of capsules containing a saponifiable oil with traces of sassafras oil, opium and aloin. The claims made on the trade package for this preparation were to the effect that it was an emmenagogue. These claims were declared false and fraudulent and in April 1922 judgment of condemnation and forfeiture was entered and the court ordered that the product be disposed of according to law—[Notice of Judgment No. 10872, issued January, 1923]

Locock's Cough Elixir—A quantity of "Dr. Locock's Cough Elixir," alleged to have been shipped in interstate commerce by I. L. Lyons & Co., Ltd., New Orleans in August 1919

was declared misbranded. The federal chemists reported that analysis of a sample showed it to consist essentially of extracts of plant drugs including ipecac and squill, small amounts of morphine and acetic acid, sugar and water. The trade package contained statements to the effect that the product was recommended as hastening a cure for incipient consumption, pneumonia, whooping cough, asthma, pains in the joints, bones and muscles, etc. These claims were declared false and fraudulent and in May 1922 judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed—[Notice of Judgment No. 11024, issued January, 1923]

Sex-Co Restorative Tablets—The Clyde Collins Co., Memphis, Tenn., shipped in April, 1921, a quantity of Sex-Co Restorative Tablets that were misbranded. The federal chemists reported the analysis showed the tablets to contain strychnine extract of damiana, iron and a phosphorus compound. The tablets were recommended as an aphrodisiac and for "Bad Blood, Sexual Weakness, Loss of Appetite, Wasting Diseases and Nervous Conditions of all Kinds." Since the tablets contained no ingredient or combination of ingredients capable of producing the effects claimed, the claims were declared false and fraudulent. In June 1922 judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed—[Notice of Judgment No. 10760, issued Dec., 1922]

Compound Tansy, Pennyroyal and Cotton Root Pills—The Allan Pfeiffer Chemical Co. of St. Louis, Mo., shipped in June 1920, a quantity of these pills which were misbranded. The federal chemists reported that they consisted essentially of iron sulphate, aloes and oil of pennyroyal. They were recommended as a "Safe and Effectual Remedy in Suppressed or Painful Menstruation." As the claim was false and fraudulent, the product was declared misbranded and in May 1922 judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed—[Notice of Judgment No. 10822, issued Dec. 25, 1922]

Correspondence

MILK GOATS AND MALTA FEVER

To the Editor—It is now well known that many dairy cows are tuberculous and that a high percentage of bone joint gland and abdominal tuberculosis is due to tubercle bacilli of the bovine type. In order to avoid this source of infection many physicians have interested themselves in the Swiss milk goat whose high degree of immunity to tuberculosis has been well known in Europe for many years.

It has been known for a long time that goats are susceptible to a disease known as Malta fever and that this disease may be transmitted to man through the agency of goat's milk.

In January 1911 I located in the hill country of southwest Texas to secure the advantages of its excellent climate. I met here an able physician, London, trained and a keen observer. This physician who had been doing an extensive practice over one of the largest mohair goat raising sections of the country for twenty years had made a clinical diagnosis of Malta fever on several occasions.

In the spring of 1911 Dr. Joseph Walkup, Captain of the U. S. Army, visited me at Kerrville, Texas. His visit was called to the fact that cases presenting clinical symptoms of Malta fever were occasionally seen in Edwards County, Texas, near the Mexican border. Dr. Walkup said that he would bring the matter to the attention of the proper authorities and suggest laboratory tests. In the fall of 1911 General Fereborough of the U. S. Army made the first official report on Malta fever in Edwards County, Texas, near the Mexican border.

Kerrville is a leading center of the Angora goat industry, and millions of pounds of mohair pass through its warehouses each year. I have been in charge of a general hospital in Kerrville for twelve years. We are surrounded by goats—mohair goats for their hair, Mexican goats for meat, and Swiss goats for milk.

During the last twelve years just two cases of Malta fever have been noted by us in this vast territory, and not a single case has been admitted to the hospital. As we have a well trained pathologist, it would be difficult for a suspicious case to escape identification.

The Swiss milk goat is in America to stay. The milk goat industry bids fair to become one of the most important branches of our live stock industry. The U. S. Department of Agriculture and the departments of agriculture of several states maintain herds of milk goats for study and experiment.

Malta fever in goats is easily determined by serologic test. My observation leads me to believe that infected herds in the United States can trace the infection to infected herds in Mexico. And while the menace of Malta fever from goat's milk is infinitesimal as compared to the menace of tuberculosis from the milk of tuberculous cows, we as physicians should fight for an absolutely clean milk supply. Every cow and every goat used in a commercial dairy should be required to show a clean bill of health, and the same rule should apply to each employee who handles the milk until it reaches the consumer.

There are many competent physicians and hundreds of parents who have seen goat's milk succeed when modified cow's milk and patent baby foods absolutely failed. To them goat's milk probably seems quite indispensable.

Its superiority is generally admitted by those who have used it, and it offers us as physicians a safe, clean source of raw milk supply. Eliminate Malta fever by serologic test, and we can recommend goat's milk to our patients as far superior to cow's milk chemically, physically and bacteriologically.

The combined efforts of physicians, parents and men of wide business experience have robbed the back alley of its threadbare joke and forced the admission of her aristocratic Swiss cousin into the most select circles of our pure bred live stock families. Let us use our influence in keeping her free from disease and supporting her in the exalted position she now occupies—the savior of the babies.

WILLIAM LEE SECOR, M.D., Kerrville, Texas

CONSTIPATION—TUBERCULOSIS—HYDROTHORAX

To the Editor—Constipation is generally considered to be due to sluggish bowels. All our numerous attempts at treatment are based on the notion of sluggish bowels. Has it ever been shown that the bowels are ever unduly sluggish? Is it not a fact that the rectum and not the intestine is loaded in constipation?

H. A. Kelly (Medical Gynecology, 1908, p. 191) conceives constipation to be an inertia of the defecation reflex, a conception that is in harmony with all clinical data. It explains the correlation of constipation with neurasthenia, and also the paradox that while we have numerous cathartics we have no cure for constipation. A simple motor function reacts to any change in the environment, while a depressed reflex is out of the range of our materia medica which contains no analeptics, no sensory stimulants and no drug or combination of drugs that might affect simultaneously all the elements of a reflex.

Incipient apical tuberculosis is looked for in adult life but never found. Then it is already—whether active or extinct—fairly advanced having had its opportunity for spreading the

disease. The period of life of the second dentition, because of a lull in the cases of clinical tuberculosis, is looked on with equanimity. But does not the fact that the tuberculin positive test keeps on rising, reaching its maximum with the end of this period, signify that tuberculosis in later life had its incipency at this period? As to the portals of entrance, can we conceive of more ideal ones than the lacerated gums picked at with fomites by the insanitary child who is mostly at large and exposed? By taking better care of children at this age, cannot we hope to increase the proportion of extinct cases?

The greater frequency of dextral hydrothorax is generally attributed to the compression of the azygos veins. Cannot this condition be accounted for by the more direct back pressure on the mouth of the lymphatic duct and pleural sac of the right side than on that of the left?

JACOB LANSKI, M.D., Chicago

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address but these will be omitted, on request.

THE WIDAL TEST

To the Editor—We have been advised of a test that differentiates between a positive Widal reaction due to a previous vaccination against typhoid and a reaction due to the disease itself. If this test is reliable please give the technic. MEDICO

ANSWER—The only reliable method for confirming a clinical diagnosis of typhoid fever in a previously vaccinated person is blood culture. However, during the World War, in vaccinated patients suffering from a continued fever clinically like typhoid, a progressive rise and fall in the agglutination curve was considered diagnostic of typhoid fever. Brosamlen observed a steep rise in the agglutination curve in 53 per cent of thirty-two vaccinated typhoid patients. Hergt reported similar findings, adding that the curve was less abrupt when vaccination had been performed two years or more before the disease was acquired. The value of such findings is impaired, however, when it is considered that many other diseases may temporarily increase the agglutination power in previously vaccinated persons. In a case of pneumonia, for example, on the first and third days, Rist found the agglutination test negative, whereas on the fifth day a titer of 100 was found and later a titer of 300. Somewhat similar results were obtained in rheumatic fever, amebic liver abscess, tonsillitis, laryngitis and simple diarrhea. In fact, only one disease is known which, instead of increasing or leaving unimpaired the agglutination power of vaccinated patients, causes it temporarily to disappear. This interesting exception is measles. Rist performed more than 11,000 agglutination tests on vaccinated and unvaccinated fever patients. He concluded that the agglutination titer is not distinguishable from the same titer in vaccinated persons suffering from any other disease, that the value of the agglutination test in vaccinated persons to determine whether or not they have typhoid fever is absolutely nil, and that no caution, no niceties of technic, no careful consideration of titer or of the behavior of curves are of any avail whatever.

ELECTRICITY IN HYPERTENSION

To the Editor—What is the present status of the use of electricity in the reduction of hypertension?

J. W. STOFER, M.D., Gallup, N. M.

ANSWER—Wilfred Harris, in his book on Electric Treatment states that beneficial results follow the use of high frequency currents in high blood pressure, whether applied by autoconduction or local application. He maintains that these results are quite permanent. On the other hand W. J. Turrell in his Principles of Electrotherapy warns one of the danger of static electricity in hypertension. Others are of the opinion that while the high frequency current will reduce high blood pressure by dilation of the capillary vessels, the result is not permanent.

XANTHINURIA

To the Editor—I have a patient who has been suffering from bilateral nephrolithiasis in a severe form for four or five years. He has been in a number of hospitals in this state and in Atlanta. There are xanthin crystals present in the urine which is said to be uncommon. It is reasonable to presume that the calculi in this case are composed of the same substance although no analysis of a passed stone has ever been made. In view of the presence in the urine of these crystalloids is there any rational therapeutic procedure that may be under taken to prevent the formation of further calculi? Please omit my name.

H S G Kissimmee Fla

ANSWER—Renal calculi composed of xanthin are extremely rare, only a few specimens having been reported in the literature. Xanthin is a purin base that is normally converted into uric acid by the action of an enzyme that is apparently secreted in the liver. Defective xanthin metabolism is therefore closely related to gout. Purin bases, in general, are derived from the catabolism of nucleic acid, which is partly endogenous, or derived from the destruction of the body cells, and partly exogenous, or taken in with the food. The former fraction is not subject to modification but the latter can be regulated by proper selection of food materials. In general, it may be said that the principal foods with high purin content are meats (especially sweetbreads and liver), fish, peas, beans, asparagus, onions, tea, coffee and chocolate. Eggs, butter, milk and cheese contain no purin bodies. It seems rational to consider that the regulation of the diet in an effort to meet this condition and the principles to be followed are similar to those in gout. The purin content of the blood should be determined, and the rapidity with which this becomes reduced on a purin-free diet to that of endogenous origin (normally about 0.5 mg a day) should be studied in order to determine the functional capacity of the body to deal with these substances. Additions may then be made in accord with this capacity. Further details are given in the standard textbooks on dietaries, such as that of Friedenwald and Rührh, or that of Carter, Howe and Mason.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA Juneau March 6 Sec Dr Harry C De Vighne Juneau
IDAHO Boise April 4 Dir Mr Harry L. Fisher Boise
IOWA Des Moines March 8 10 Sec. Dr Rodney P Fagen State House Des Moines
MAINE Portland March 13 14 Act Sec Dr Adam P Leighton 192 State St Portland
MONTANA Helena April 3 Sec Dr S A Cooney Power Bldg Helena
NEW HAMPSHIRE Concord March 9 10 Sec Dr Charles Duncan Concord

District of Columbia October Examination

Dr Edgar P Copeland, secretary, Board of Medical Supervisors of the District of Columbia reports the oral and written examination held at Washington, Oct 10-12, 1922. The examination covered 8 subjects and included 80 questions. An average of 75 per cent was required to pass. Nine candidates were examined all of whom passed. Five candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad	Per Cent
Georgetown University		(1921)	88 8
George Washington University	(1916) 35 1	(1922)	
763 828 829 841 86			
Howard University		(1922)	75

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Coll of P and S Baltimore		(1896)	W Virginia
Johns Hopkins University		(1911)	Minnesota
Maryland Medical College		(1904)	Maryland
Univ of W Tenn	(1914)	Missouri,	(1915) Tennessee

New Jersey October Examination

Dr Alexander MacAlister, secretary, New Jersey State Board of Medical Examiners reports the written examination held at Trenton Oct 17-18, 1922. The examination covered 9 subjects and included 90 questions. An average

of 75 per cent was required to pass. Of the 12 candidates examined, 6 passed and 6 failed. Forty-four candidates were licensed by reciprocity and 2 candidates received osteopathic licenses by reciprocity. The following colleges were represented:

College	PASSED	Year Grad	Per Cent
Harvard University		(1921)	83 8
Tufts College Medical School		(1921)	77
Woman's Med College of Pennsylvania		(1921)	84
Queen's University Kingston Ont		(1921)	83 1
University of Berne Switzerland		(1916)*	75 1

College	FAILED	Year Grad	Per Cent
University of Budapest, Hungary		(1914)*	68 6
University of Catania Italy		(1915)	72
University of Naples Italy	(1903)* 72 6	(1916)* 70 1	
(1919)* 69 1			
University of Valencia Spain		(1915)*	66 6

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
University of Georgia		(1906)	Georgia
Chicago College of Medicine and Surgery		(1917)*	Illinois
Rush Medical College		(1895)	New York
Tulane University		(1921)	New York
Johns Hopkins University		(1907)	Maryland
Maryland Medical College		(1912)	W Virginia
University of Maryland		(1921)	Maryland
University of Michigan Medical School		(1912)	Michigan
Washington University		(1918)	Maryland
Columbia University	(1913)	(1918)	(1921) 3
Fordham University		(1920)	(1921) 6
Long Island College Hospital			(1904)
N Y Homeo Med Coll and Flower Hospital			(1901)
Univ and Bellevue Hosp Medical College		(1921) 3	New York
Jefferson Medical College	(1896)	(1907)	Pennsylvania
Delaware North Carolina			
Medico Chirurgical College of Philadelphia		(1910)	Pennsylvania
Temple University		(1908)	Pennsylvania
Univ of Pa	(1894)	(1907)	Pennsylvania
University of Tennessee		(1921)	New York
Baylor University		(1921)	Tennessee
University of Vermont		(1919)	(1921)
University of Virginia		(1921)	New York
McGill University		(1920)	Michigan
Queen's University		(1914)	New York
University of Munich Germany		(1911)*	Texas
University of Naples Italy		(1916)*	New York
Osteopaths			Missouri Pennsylvania

* Graduation not verified

Porto Rico October Examination

Dr M Quevedo Baez, secretary, Porto Rico Board of Examiners reports the written and practical examination held at San Juan Oct 3-7, 1922. The examination covered 9 subjects and included 75 questions. An average of 75 per cent was required to pass. Of the 10 candidates examined 9 passed and 1 failed. The following colleges were represented:

College	PASSED	Year Grad	Per Cent
Howard University		(1922)	75 4
Rush Medical College		(1922)	77 7
St Louis University School of Medicine		(1921)	82 1
Syracuse University		(1922)	85
Jefferson Medical College		(1921)	82 7
Medical College of Virginia		(1921)	83 8

College	FAILED	Year Grad	Per Cent
Chicago College of Medicine and Surgery		(1916)	60 7

Kentucky December Examination

Dr A T McCormack, secretary, Kentucky State Board of Health reports the oral written and practical examination held at Louisville Dec. 5, 1922. The examination covered 11 subjects and included 110 questions. An average of 70 per cent was required to pass. Of the 8 candidates examined 7 passed and 1 failed. One candidate was licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad	Per Cent
Hospital College of Medicine Louisville		(1906)	80
Kansas City University of Physicians and Surgeons		(1911)	80
St Louis College of Physicians and Surgeons		(1911)	80
Felicit Medical College		(1911)	84
McHerry Medical College		(1911)	73
University of Virginia		(1919)	
University of Turkey R. A.		(1911)	77

College	LICENSED BY RECIPROCITY	Year Grad	Per Cent
McHerry Medical College		(1911)	77
Graduation not verified			

Medical Economics

CONFERENCE ON NEW YORK STATE MEDICAL PROBLEMS

Governor Alfred E. Smith of New York held a conference in the capitol at Albany, February 26, with representatives of the Medical Society of the State of New York and others, to discuss some of the medical problems of the state.

RURAL MEDICAL PROBLEMS

The state commissioner of health, Dr. Herman E. Biggs, called attention to the small number of physicians now locating in rural districts, and to the difficulty residents of those sections have in obtaining medical aid. The situation is likely to grow worse, rather than better, in Commissioner Biggs' opinion, unless action is taken, but establishment of health centers to relieve the situation, as proposed by the state department of health as a way out, proved unacceptable to the medical profession. There seems to be a need, Dr. Biggs said, for establishment of hospitals of a proper type—possibly cottage hospitals such as exist in England, acting as feeders to the larger hospitals in metropolitan centers—and rural ambulance service is essential. The people of the sections where these facilities are most needed cannot provide them for themselves. Looking on the protection of health and the relief of sickness as fundamental functions of the state, Commissioner Biggs thought that government aid should be provided in time to prevent serious consequences from the present trend of affairs.

Dr. Arthur W. Booth, president of the state medical society, did not look on the situation as so serious as pictured by Dr. Biggs. If adequate hospital and laboratory facilities are provided, young physicians will, he believed, go into rural communities to practice, and if such communities fail to provide the necessary facilities for medical service, they should not blame physicians for not coming to them, or blame the state for not providing them. Dr. Booth and other speakers emphasized the fact that so-called rural communities were in numerous instances solving the problem for themselves by providing hospital service, and called attention to the number of instances in which they had done so.

Dr. Walter E. Kidder of Oswego suggested the advisability of the establishment by the state of scholarships in medical schools, to be awarded to students who will obligate themselves to practice in rural communities for a certain number of years after graduation, but it was suggested that such scholarships would have to be filled by young men from the country, since it would be found practically impossible to make a country doctor out of a city bred youth. Emphasis was laid on the seasonal character of the problem, there being no difficulty in obtaining medical service during the warmer portions of the year when the roads were open. Farmers in their automobiles pass the offices of nearby physicians during the warmer periods of the year to avail themselves of the services of supposedly better physicians in nearby cities and towns, but are dissatisfied because they do not have local physicians at their beck and call during the winter months. Physicians who locate in the country sooner or later tire of this condition and move to the cities and towns. Young physicians were deterred from entering country practice, it was said, because of the small fees charged by the older local practitioners fixed on a scale that was reasonable enough when they began practice but not in keeping with the present cost of medical education or the expenses of medical practice. Dr. Booth suggested that persons living in sparsely settled country districts must learn that the day is gone when a doctor can properly treat them in their own homes, winter and summer day and night and that they must provide hospital and ambulance facilities to enable their sick to be cared for in proper local hospitals. The cottage hospital idea except in extreme and difficult situations met with no general approval, the opinion being apparently that a three or four bed hospital, in which only minor surgery could be done and with limited laboratory facilities, would not be sufficiently attractive to aid in bring-

ing competent practitioners into the communities so equipped. Hospital facilities, laboratory facilities, and a certain amount of competition were essential, Dr. Booth said, to make a place an attractive location for a physician.

THE NARCOTIC DRUG PROBLEM

The narcotic drug problem was discussed by Drs. Haven Emerson, Harlow Brooks, Walter Timme, Carleton Simon, and Amos O. Squire. There was a general sentiment in favor of the principles embodied in the Harrison Narcotic Law, and of having state narcotic legislation conform to it. The Harrison law, it was generally agreed, is adequate so far as the medical profession is concerned. What is needed is better law to deal with the smuggler, the narcotic drug pedler, and the addict of criminal type. Dr. Emerson and Dr. Brooks agreed that narcotic drug addiction is not a disease. Dr. Simon, special deputy police commissioner, in charge of the antinarcotic work of the New York City Police Department, emphasized the distinction between addicts who constitute medical problems and those who are essentially police problems. Out of 6,235 drug addicts arrested in New York City in the last two years, only 2 per cent attributed their drug addictions to treatment by physicians for disease or bodily infirmities. The remainder became drug addicts through vice and evil companionship. The addicts who in their addiction constitute true medical cases constitute a small part of the entire group and can obtain adequate treatment, Dr. Simon thought, but the rest should be handled by the police. Dr. Squire confirmed the general belief that narcotic drug addiction is on the increase, basing his statement on the increase during recent years in the number of drug addicts among prisoners committed to Sing Sing. He concurred in the opinion that drug addiction is due oftener to evil associations than to medical treatment, and called attention to the temptations by drug pedlers, who give prospective victims opportunities to test drugs, thus creating addicts. Only a small percentage of addicts, he thought, are ever permanently cured, although all are eager to be treated and are grateful patients.

MEDICAL EDUCATION

Dr. William Darrach, dean of the Columbia University College of Physicians and Surgeons, urged that there be no letting down in the standard of medical education. He suggested the possibility of a revision of the standard medical curriculum of today so as to make each graduate essentially a general practitioner, leaving the development of specialists in any line to those willing to supplement the standard four year course of training by additional study. As one factor calculated to influence young men in entering the medical profession, he urged the fixing of a single standard by the government for all who desire to enter upon the treatment of disease and injury. To require of a physician the equivalent of two years of college work, four years of study in a medical school, and one or two years in a hospital, before allowing him to practice, while at the same time allowing an irregular practitioner of healing to assume substantially the same responsibilities with respect to human life and public health as is assumed by physicians, but requiring of such irregular healer no fixed amount of preliminary education and only eighteen months of medical training, is hardly a rational or a fair procedure. Dr. W. D. Cutter, secretary of the state board of medical examiners, urged the need of better provision for the enforcement of the medical practice act in New York State, endorsing legislation vesting in the attorney general certain authority with respect thereto, supplementing, but not diminishing the authority of local district attorneys to prosecute on the basis of information furnished by county medical societies. Dr. Simon Flexner of the Rockefeller Institute urged that nothing be done that would hamper or prevent medical research, and spoke particularly of the danger inherent in a bill now before the legislature which, under the guise of preventing "experimentation on children," would prevent the use of a new remedy for disease or injury.

At the close of the meeting a committee was appointed to formulate the principles agreed on and to cooperate with the governor in carrying such principles into effect as circumstances indicate.

Book Notices

STUDIEN ZUR ANATOMIE UND KLINIK DER PROSTATAHYPERTROPHIE Von Julius Tandler O. b. Professor Vorstand des Anatom. Institutes an der Universität Wien und Otto Zuckerkandl A. O. Professor der Chirurgie an der Universität Wien. Paper. Price \$3.60. Pp. 130, with 121 illustrations. Berlin: Julius Springer, 1922.

This is the product of one of the most fruitful combinations in medical work, the collaboration of the theoretical scientist with the clinician. In the introductory chapter the authors analyze the older theories concerning the nature and causes of prostatic hypertrophy, they deny the rationality of the term prostatism, refute the interpretation of prostatic hypertrophy as a compensatory or inflammatory reaction, and assert that the type of this tumefaction is glandular, and that this glandular hyperplasia originates in rudimentary glands. Hyperplasia is the primary factor, the changes in the fibrous skeleton are secondary. The variations in the microscopic pictures are explained by the fact that in this neoplasm of the prostate new formation of tissue and regressive metamorphosis occur simultaneously. It is declared to be still an open question whether prostatic hypertrophy is to be considered a true neoplasm or a hyperplasia. Tandler and Zuckerkandl have proved that prostatic hypertrophy is always confined to a well circumscribed area of the prostate, and that in growing it begins at the urethra, pushes aside the prostatic gland and finally compresses it, so that the tumefaction forms the nucleus of a prostate that was transformed into a capsule by stretching. The authors recede now from their original statement that the median lobe is the exclusive seat of prostatic hypertrophy. They are now convinced that the adenomatous intumescence originates in rudimentary glands pertaining to the upper part of the prostatic urethra. They distinguish two main types of prostatic hypertrophy. The general character of the first type is based on the fact that the vesical urethral opening is changed in a characteristic way by the prostatic tumor, which protrudes into the cavity of the viscus. The internal urethral orifice is no longer flush with the vesical floor, but is either located on top of the prostatic protrusion or is to be seen somewhere on the dependent side of this pathologic hillock. Thirty-two illustrations show all the variations of this type, and histories of clinical cases are given. The second type is represented by the cases in which the whole tumor is located subvesically. The basis of the bladder is dislocated upward, but the internal urethral orifice and its relation to the muscular apparatus remains unchanged. There is no recessus retroprostaticus inside the bladder, and the urethral orifice is on the same plane with the surrounding structure. The hypertrophy is limited to the upper part of the prostatic urethra, and the tumor mass surrounds the urethra like a ring. If this subvesical tumor is enucleated, it shows the form of a globe or of an ovoid. The fourth subdivision deals with tumefactions around the vesical opening that cannot be classified as true prostatic hypertrophy, for instance, endovesical myoma, and a submucous myoma. Next follows a chapter describing the secondary changes in the bladder and its appendages due to the stagnation of the urine produced by prostatic hypertrophy. In discussing cancer of the prostate, the authors are inclined to believe that the malignant degeneration is secondary to the hypertrophy in most cases. They also believe that secondary prostatic cancer almost never produces metastases, while primary carcinoma, the so called Recklinghausen tumor, shows an inclination toward metastasis in the bones. An interesting chapter deals with the fate of the wound cavity after prostatectomy. The simultaneous occurrence of diverticula and prostatic hypertrophy is also discussed as to diagnosis, complications and operative results. In regard to true relapses after prostatectomy the authors maintain that they may originate only in parts of the mucosa of the upper prostatic urethra that were left by the operation. The concluding chapter elaborates on the details of diagnosing prostatic hypertrophy with all the possible complications. Cystoscopic pictures of striking beauty accompanying the text. This book is a worthy document for the scientific thoroughness of the

authors, one of whom, unfortunately, died before the work was published.

LATERAL CURVATURE OF THE SPINE AND ROUND SHOULDERS By Robert W. Lovett M.D. Sc.D. John B. and Buckminster Brown Professor of Orthopedic Surgery Harvard University. Fourth edition. Cloth. Price \$2.50. Pp. 217 with 172 illustrations. Philadelphia: P. Blakiston's Son & Co. 1922.

This edition is of the high character of the previous editions. It furnishes an excellent guide for the general practitioner and specialist who wish to study this most difficult subject. Referring to the matter of faulty attitudes in school and elsewhere the author says that in his opinion it is not likely that they are the causes of moderate and severe structural scoliosis. Regarding the Abbott method of treatment he says: "The method is evidently no cure-all and his claims have apparently not been substantiated by others." Operative procedures are still held sub judice, sufficient time not having elapsed since their introduction to allow a proper estimate of their value. Lovett strongly emphasizes the necessity of mobilizing spines in order to obtain the greatest correction and the need of much gymnastic work in the follow-up care after forcible correction in casts and jackets. The legends of Figures 96 and 97 are reversed and in the chapter on occurrence, in referring to the occasional appearance of scoliosis in fowls, after ruling out several mentioned causes as not acting in the given cases, the author makes the rather startling physiologic observation that we must attribute the cause either to intra-uterine pressure or to purely static causes arising late in life." Since this comment has appeared in the preceding editions, it suggests that some parts of the text have not had very careful reading either by the author or by his students who could hardly fail to notice the anomaly of intra-uterine pressure in the domestic fowl.

TRAITÉ DE PATHOLOGIE MÉDICALE ET DE THÉRAPEUTIQUE APPLIQUÉE Publié sous la Direction de Émile Sergent Professeur de Clinique médicale propédeutique L. Ribadeau Dumas Médecin de la Maternité et L. Babonneix Médecin de la Charité. Tome V. Sang. Organes Hématopoiétiques. Rate. Os. Par Pr. Bezangon Le Sourd Agasse Lafont Pagniez Hazard Sainton Apert. Paper. Price 25 francs. Pp. 544 with 71 illustrations. Paris: A. Maloine et Fil. 1922.

The tenth volume of the treatise on medical pathology and applied therapeutics of Sergent, Ribadeau Dumas and Babonneix covers diseases of the blood and hematopoietic organs: spleen and bones. Following an introduction by Bezangon and Le Sourd pointing out the value and importance of a study of hematology the book is divided into three sections. Part 1, by Pagniez and Agasse-Lafont deals with the diseases of the blood and hematopoietic organs, and includes a section by Hazard on the physical and chemical examination of the blood. Part 2, by Agasse-Lafont treats of diseases of the spleen. Part 3 by Sainton has to do with diseases of the bones and includes a chapter on rickets by Apert. Each of the sections is written in a clear and concise manner the subject matter being well selected and in the main, adequate, although none of the discussions seem as comprehensive as would be expected from the character of the work. In the chapter dealing with the chemical examination of the blood, little or no attention is paid to the work of our American investigators who have done so much to advance this field of clinical diagnosis and no mention is made of the study or determination of the hydrogen ion concentration of the blood. The purely clinical part of the work follows the usual discussions of the subjects treated and offers little or nothing that is new. However there is much of value in the work for the general student and practitioner.

DIE RÖNTGENDIAGNOSTIK DES MAGENS UND DARMKRANKHEITEN Von Dr. Emmo Schließinger Spezialarzt für Magen- und Darmkrankheiten in Berlin. Second edition. Paper. Price 1.30 mark. 156 with 236 illustrations. Berlin: Urban & Schwarzenberg, 1922.

The author professes that his aim in writing this book was to furnish a reliable guide for beginners to be of help to practicing roentgenologists and to point out the manner in which they should engage in roentgen ray research. The author has succeeded in this.

an enthusiastic roentgenologist, he insists that roentgen-ray diagnosis never should be used independently, but should be employed in cooperation with all other diagnostic means. He concedes to the surgeons that they were the initiators of roentgen-ray diagnosis, as they recognized its importance prior to the internists. After discussing the technology, the author presents and interprets pictures of the normal organs, and brings the visible changes due to functional activities into comparison with the outlines of the quiescent organs. Pathologic conditions and their expressions in the roentgenogram and in the fluoroscopic picture are taken up, special stress being laid on differential diagnosis and possible sources of error. The surgical pathologic conditions and the resulting indications are particularly well worked out in detail. This chapter is very instructive because a large number of the cases reported and illustrated were controlled either by midoperative or postmortem observations. In this way, roentgenologic findings may be compared with the findings during operations, as in resections and entero-anastomoses, while postoperative pictures confirm or disprove the results. The author devised a method of roentgenologic determination of the acidity of the stomachic secretion without use of the stomach tube. He describes minutely its execution. The details of this book cannot be the subject of a review; they have to be studied as they are presented. There are a multitude of excellent pictures covering our knowledge of the diagnosis of diseases of the digestive tract. The explanatory text covers in a perspicuous, concise way all that a scientific interpretation demands.

ENCYCLOPÉDIE FRANÇAISE D'UROLOGIE. Publiée sous la direction de MM. A. Pousson, Professeur à la Faculté de médecine de Bordeaux et E. Desnos, Ancien interne des Hôpitaux de Paris. Volume IV. Maladies de la Vessie. Par MM. O. Pasteau, Arcelin, Rouvillois et Ferron, Heitz, Boyer, H. Minet, Ertzbischoff, Verhoogen, Malherbe et Pasquereau, Nicaise, Gaucher et Druelle, Estor et Vialleton, E. Forgeu, A. Pousson, Courtade, Paul Delbet, Genouville et Boeckel, Desnos. Paper. Price 60 francs. Pp. 1154 with 517 illustrations. Paris: Gaston Doin, 1921.

The fourth volume of this huge encyclopedia of urology is devoted to diseases of the bladder. The subject matter is divided into two parts, one embracing methods of examination and the other devoted to the well defined clinicopathologic entities. The various chapters are written by men whose names stand high in modern urologic thought and accomplishment. The clinical diagnostic methods of examining the bladder are described by Dr. Pasteau. The second chapter elucidates roentgenographic diagnosis of bladder lesions. Traumatic lesions of the bladder are thoroughly discussed. Those parts dealing with the pathologic physiology and mechanism of the lesion may serve as an example in completeness. A chapter on cystitis by Heitz-Boyer occupies ninety well written pages, illustrated by colored plates and by numerous half-tones of gross pathologic lesions. The chapter on bladder stone by Drs. Desnos and Minet is exceptional in its completeness and beauty of illustration. There is an entire chapter on syphilis of the bladder, one on acquired bladder fistulas and a splendid section on functional disturbances.

PRINCIPLES AND PRACTICE OF INFANT FEEDING. By Julius H. Hess, M.D., Professor and Head of the Department of Pediatrics, University of Illinois College of Medicine. Third edition. Cloth. Price \$4 net. Pp. 496 with 34 illustrations. Philadelphia: F. A. Davis Company, 1922.

This book has made a place for itself as a textbook of recognized merit, and as a convenient guide for the practitioner in the problems associated with the successful care and feeding of infants. In the preparation of the third edition the chapters on vomiting, colic, constipation and abnormal stools have been completely rewritten. New chapters dealing with rickets, scurvy, spasmophilia, acidosis and anemia have been added and all of the chapters on the nutritional disturbances have been revised and brought up to date. In order to accommodate this additional material the form of the book has been changed to a larger page size. With the additions the book is an up-to-date practical reference work on the care and feeding of the infant.

Miscellany

AMEBIC DYSENTERY: ITS PREVALENCE, DIAGNOSIS AND TREATMENT

The study of dysentery from an etiologic point of view, as Kilpatrick¹ points out, has received more scientific attention during the last twenty years than ever before, because of the increasing importance given to tropical medicine in our own country and, especially, in England. "Dysentery," as the term is used today by many physicians, simply signifies a symptom-complex of frequent bowel movements with pain, tenesmus, and blood in the dejecta. In this sense, according to Reed, it may be purely symptomatic, it may be due to bacterial infection, tuberculosis, syphilis, poisoning with mercury or arsenic, mechanical irritation, animal parasites, kala-azar, pernicious malaria and trematodes, infection with ciliate and flagellate parasites, and *Endameba histolytica*.

The common belief used to be that amebic dysentery was a purely tropical and subtropical disease. Data based on improved methods of examining stools and on controlled clinical observations of men under orders during the war, and of various classes of civilians since the war, show that the disease is fairly common in temperate climates also.

The British suffered heavy casualties from amebic dysentery in the Gallipoli campaign. They therefore gave a number of their protozoologists intensive training, and placed in their hands large numbers of men suffering from chronic dysentery, concentrating them in special hospitals. Allan,² in summing up the literature of the last few years on this subject, gives some interesting statistics tabulated from reports of Archibald, Hadfield, Logan, and Campbell,³ of the Royal Army Medical Corps. Of 31,000 British troops returned from the Near East, 98 per cent were carriers of *Endameba histolytica*. Of 7,000 troops and civilians without any history of bowel trouble, examined in the eastern Mediterranean area, 10.5 per cent were infected, and of 5,000 troops and civilians examined on the western front, 8.9 per cent were carriers.

Kofoid found by subjecting 2,300 of our troops in New York, just returning from France, to one examination that 12.8 per cent were infected with *Endameba histolytica*. One examination has been found to uncover only from one-third to one-half the actual number infected, or the number that six examinations will uncover. Hence the actual number affected would probably be from 24 to 36 per cent. The United States Public Health Service was urged to take effective measures to detect and rid our returned soldiers of the infection. Under the direction of the service, Stiles⁴ reports that a fairly comprehensive investigation was made to corroborate if possible Kofoid's findings before any expensive and far-reaching measures were decided on, and that the results indicate the prevalence of the disease in this country in general.

Amebic dysentery manifests itself clinically in temperate zones most frequently in the chronic form or in the carrier state, which differs from the former only in degree. The symptoms of chronic amebiasis are, as Reed, Stiles and others point out, bizarre, intercurrent attacks of diarrhea alternating with constipation, neurasthenia, loss of weight, anemia, amenorrhea and a variety of other complaints. Such patients should have repeated stool examinations, on the discovery of the cysts, proper treatment should be instituted. A carrier of cysts may not only develop acute, distressing and dangerous symptoms at any time, as well as liver abscess, but is continually a source of danger to his fellow men. Hogan⁵ and a few others have reported cases of appendicitis

¹ Kilpatrick, S. C. Prevalence of Entamebic Disease. Diagnosis and Treatment. South. M. J. 15: 275-280 (April) 1922.

² Reed, A. C. Diagnosis and Treatment of Amebic Colitis. Am. J. M. S. 164: 587 (Oct.) 1922.

³ Allan, William. A Review of the Recent Work on Amebic Dysentery. Boston M. & S. J. 183: 545-548 (Nov. 4) 1920.

⁴ Archibald, R. G., Hadfield, G., Logan, W. and Campbell, W. J. R. A. M. C. 26: 675-1916.

⁵ Stiles, C. W. The Public Health Status of Amebic Dysentery in the United States as Potentially Influenced by the World War. Boston M. & S. J. 186: 377 (March 23) 1922.

⁶ Hogan, E. P. Appendicitis Caused by Entameba Histolytica with Postoperative Amebic Ulcer Perforation of Cecum. J. Trop. Med. 24: 259-1921.

due to an undetected amebic dysentery, and occurring synchronously with it

The vegetative, freely moving form seems to develop only in the intestine, and, when conditions there are favorable it is present in large numbers, bringing on what is recognized as an acute attack. It is then easily discovered in the blood-streaked mucus of the stool. This form must be differentiated from that of *Endameba coli*, which is nonpathogenic. The nuclear material of *Endameba histolytica* is coarsely granular with the ectoplasm clear and more refractile than that of other large cells in the stool, making the detection of the ameba with the low power comparatively easy. It frequently contains vacuoles, and ingests red blood cells with ease. Only the ectoplasm is actively motile, the endoplasm seems to flow passively along as the ectoplasmic pseudopodia propel it. Movements cease if the specimen is allowed to cool off for any length of time. It then becomes more spherical and the margin of the ectoplasm appears as a highly refractile ring. There is no sharp dividing line between the endoplasm and ectoplasm of *Endameba coli*. Both seem to extend out into the pseudopodia. It very rarely ingests red blood cells.

Only in chronic cases and in carriers, as a rule, can cysts be found. Cysts develop when conditions for growth become unfavorable. Invasion is believed to be accomplished by the encysted form through contaminated food, fruit or water. The cysts live for a long time in water. They pass through the intestine of flies unchanged and are present in fly droppings. In the intestine of man the cysts are converted into vegetative forms producing undermined ulcers in the cecum and large intestine—ulcers that appear to be secondary to a gelatinous necrosis in which the amebas are found. After specific treatment and sometimes without this, conditions for its development in time become unfavorable, and the vegetative forms disappear from the stool, but numerous cysts may

Medicolegal

Notice Required in Actions for Malpractice—Not Liable for Failure to Treat Eyes

(Shoers v. Hahn (115) 190 N. W. R. 422)

The Supreme Court of Wisconsin says that the plaintiff brought this action to recover damages for loss of services of his daughter alleged to have resulted from the failure of the defendant to treat her eyes at birth with a 1 per cent solution of nitrate of silver as required by Section 1409-1, Wisconsin Statutes of 1921. The daughter was born in December 1918 and this action was begun in September, 1921. No notice of injury was served before the commencement of the action. At the close of the plaintiff's testimony, the trial court granted the defendant's motion for a nonsuit on the ground that the statutes of limitation of Wisconsin had run on the cause of action and also on the ground that the plaintiff's evidence failed to show that the injury to the daughter's eye was due to the defendant's failure to administer the nitrate of silver solution, and the judgment of the trial court for the defendant is here affirmed.

It was established in the case of *Frechette v. Kohn* 145 Wis. 589 that in an action by the person injured for malpractice founded on tort the notice required by Section 4222 (5) Statutes of 1921 was necessary, because it was an action for an injury to the person, and in *Klimolil v. Saucermann* 165 Wis. 60 160 N. W. 1051, it was held that the notice was necessary in an action by the person injured for malpractice founded on contract. It is therefore settled that, were this an action by the person injured it could not be maintained without the notice.

Superintendent Employing Physician for Plantation

(*Howison v. Nicholson (Ala.) 93 So. R. 373*)

The Court of Appeals of Alabama, in affirming a judgment in favor of the plaintiff, says that he brought suit on an account for medical services rendered and medicine furnished during the year 1920 to the tenants of the defendant. There was no denial of the fact that the services were rendered, and medicine and drugs furnished, and that the account was true and correct. The only question was the liability of the defendant. The plaintiff testified that the only contract he had for the services performed and medicine furnished was made with the defendant's superintendent, that it was the custom on the defendant's farm, and had been for several years, for the superintendent or general manager to employ a physician for the laborers, and to see that the hands on the farm had medical attention, a custom which was known to the plaintiff when he contracted with the superintendent, and that it was the custom of the defendant to pay in the latter part of the year whatever physician rendered the medical services under orders from the superintendent. The defendant denied that the superintendent had any authority to employ the plaintiff, or to make any contract that would bind the defendant without first submitting it to him for his approval, and he testified that the only way he paid for medical attention to any of his hands was in case they had money due them in the fall of the year, which was not the case that year with reference to any of the persons named in the plaintiff's account. But from the testimony of the plaintiff, it was clear that the general manager or superintendent, who was expected to make provision for the health of the laborers, not only was following the custom of the plantation, but also was well within his authority as a general superintendent in contracting with the plaintiff to give medical attention to the defendant's laborers. The plaintiff, as a third party, was no doubt relying on a custom that had prevailed, according to his and a former superintendent's testimony, on this plantation for some years, and it mattered nothing if the defendant did forbid employment for medical services, except in the manner indicated by his testimony. He could have no private agreement with his agent which would prevail, if the plaintiff knew nothing of it but relied on the custom stated. The fact, if it was a fact, that the superintendent profited by such an agreement with the plaintiff, could not, in the light of his authority to make the contract, be any reason for casting it aside, nor any reason for questioning the good faith of the plaintiff in making the contract with the superintendent. It clearly appeared that, while the evidence was in conflict, there was sufficient evidence to support the judgment rendered.

Statute of Limitations and Expert Testimony in Malpractice Case

(*Carson v. Jackson (D. C.) 281 Fed. R. 411*)

The Court of Appeals of the District of Columbia, in affirming a judgment in favor of the plaintiff without stating the amount, says that the plaintiff alleged that she was suffering from osteomyelitis of the radius of the left arm but that the defendant through negligence at first treated her arm as if it were not so afflicted, and, after he discovered the disease, negligently and unskillfully treated it, causing much pain and a deformity. The plaintiff was a minor and the defendant contended that, under the statute providing that such actions must be brought within three years but allowing a minor three years after arriving at his majority to institute such an action, if a minor brings the action during his minority he must do so within three years from its accrual, and that because the plaintiff did not so bring her action within three years it was barred. The court however holds otherwise being of the opinion that under the statute a minor has the entire period of his minority and three years thereafter in which to institute the action.

On the testimony of laymen relative to the condition of the child's arm and to the treatment given by the defendant surgeons were asked a hypothetical question which concluded with the words: "In your opinion would you say that the physician had given the case the care and attention which

a physician and surgeon of ordinary skill and ability practicing in the District of Columbia would have given under all the circumstances as related?" The court sees no reason why the testimony of laymen concerning the treatment given by the defendant to the child's arm was not a sufficient basis for the hypothetical question. The defendant did not contend that the testimony was improperly admitted. Besides, it was open to him to show that the testimony did not correctly describe the treatment or condition of the child, and, if he had satisfied the jury that it did not, the answer of the surgeons, based on it, would necessarily have failed of effect.

Was the question objectionable as invading the province of the jury? By the question, the witness was not asked to say whether or not the defendant had been guilty of negligence or malpractice, although probably that was the effect of the question. In order that the plaintiff might make out her case, it was necessary for her to show to the satisfaction of the jury that the defendant had not given her the care and attention that a physician and surgeon of ordinary skill and ability practicing in the District of Columbia would have given under the circumstances related. She could not prove it, except by surgeons who knew what care and attention such surgeons would have given. Laymen would have been incompetent to testify on the subject. The jurors knew nothing about it. It was quite different from an ordinary case of negligence, in which the jury is able to solve the question by applying thereto their own experiences. In such a case, the test is: How would a reasonably prudent man have acted under the circumstances? There is no room for expert testimony in a case like that. But here it was necessary that the experts should tell the jury the essential thing, namely, whether or not the defendant's treatment of the plaintiff satisfied the standards of care observed by surgeons of ordinary skill in the District. If they simply answered that the treatment was improper or unskillful, that would not have gone far enough. The jury would still be in the dark as to whether or not the treatment was in accordance with the standards just mentioned. Light on that subject could be given only by an answer to a question such as the one propounded.

With respect to whether the question was leading, perhaps it would have been better if the expert had been asked whether in his opinion the treatment was in accordance with the standards mentioned. However, the question propounded could not have prejudiced the defendant. The court assumes that the expert well knew, before the question was asked, what answer was expected of him, and he was not, therefore, influenced by the form of the interrogatory.

What were the circumstances of the case, or what was the treatment given, the court does not state.

No One Pronounced Insane for Religious Belief

(*West et al. v. Iowa Seventh Day Adventist Ass'n Inc. (Ia.) 189 N. W. R. 765*)

The Supreme Court of Iowa, in reversing a decree that set aside certain deeds made to the defendant association by a Mrs. Smith, states that a volume of opinionated testimony was offered to prove that she was insane on the subject of the Seventh Day Adventist religion. But this court is bound to say that the law pronounces no one insane or unsound of mind on account of mere religious belief, no matter how unreasonable it may appear to a judge or any one else. A belief in the doctrines maintained by any of the religious denominations would not establish insanity or unsoundness of mind. Still, a person might be a monomaniac as to any form of religion. However this court is not prepared to say that Mrs. Smith was a monomaniac as to her religion. She was greatly wrapped up and absorbed, and an unceasing worker in her church, and implicitly believed in the efficacy of prayer, and that her prayers were answered, and probably when she spoke of being commanded by God to do certain things, she meant that her prayers were answered. This court can hardly reason that she was insane on that account. Many people so believe. People whose sanity is not questioned claim to converse with people of the spirit world. It is not for this court to pronounce judicially whether they do or not.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below

American Journal of Physiology, Baltimore

January 1923 65, No 2

- *Retinal Reflex in Frogs V H K Moorhouse Winnipeg—p 177
- *Examination of Certain Proposed Tests for Fatigue F S Lee and J D Van Buskirk New York—p 185
- *Mechanism of Sterilization of Female by Spermatoxin J L McCartney Chicago—p 207
- *Studies of Thyroid Apparatus I. Effects of Loss of Thyroid and Parathyroid Glands at 100 Days Age on Growth in Body Length Body Weight and Tail Length of Male and Female Albino Rats F S Hammett Philadelphia—p 218
- Changes in Organ Weights of Guinea Pig During Experimental Scurvy D H Bessen Minneapolis—p 245
- *Acetonitril Test for Thyroid and Some Alterations of Metabolism R Hunt Boston—p 257
- Distribution of Vagus Nerves to Sino-Auricular Junction of Mammalian Heart G Bachmann Atlanta Ga—p 300
- Studies in Fatigue VIII Sturcase Phenomenon in Mammalian Skeletal Muscle C M Gruber St Louis—p 338
- Ash of Human Sweat Produced by Heat and Work G A Talbert Chicago—p 350
- Inadequacy of Our Present Blood Volume Methods P D Lamson and S M Rosenthal Baltimore—p 358
- *Shape of Glomeruli and Bowman's Capsules in Active and Inactive Kidney W N F Woodland London—p 368
- Resistance of Fish to Salts and Alkalinity R T Young University N D—p 373

Retinal Reflex in Frogs—An investigation of the parts of the central nervous system involved in transmitting the 'retinal reflex' impulse is reported on by Moorhouse. Removal of the cerebral hemispheres appears to shorten the average reaction time of the retinal reflex, and to make the response more active. The area of the frogs brain which is most important in forwarding the impulse is the optic tectum, especially the anterior portion.

Results of Proposed Tests for Fatigue—Lee and Van Buskirk examined experimentally a considerable number of physical tests which either have been proposed, or might be employed, as indicators of fatigue in human beings. They failed to find in any of the tests a reliable criterion of the daily physical fatigue of the individual from such physical exertion as a walk of 14 miles.

Mechanism of Sterilization of Female by Spermatoxin—McCartney asserts that female rats may be sterilized for a period of from two to twenty-two weeks by subcutaneous injections of spermatozoa, or testis extract (confirming the work of Guyer and Dittler on rabbits). Subcutaneous injections of other organ extracts do not cause sterility. The sterility seems to be due to the presence of spermatoxins in the vaginal and uterine secretions of the immunized animal. These spermatoxins immobilize and agglutinate the spermatozoa. Within limits, the degree of immunity appears to be proportional to the amount of the antigen injected. Immunization with spermatozoa does not affect the sexual cycle (ovulation and rut) of the female (confirming the work of Dittler). Subcutaneous injection of spermatozoa into adult male rats tends to cause destruction of the spermatozoa and atrophy of the testes (confirming the work of De Leslie on rats and Guyer on rabbits). This effect may be only temporary. Subcutaneous injection of sperm suspension from a rooster into egg laying hens, does not influence the rate of egg production, but renders the eggs infertile for a period of from twelve to sixty-seven days. Injection of chicken liver extract does not produce infertility of the eggs.

Effects of Loss of Thyroid and Parathyroid Glands—Hammett has made an examination of the effects on the growth in body length, body weight and tail length of male and female albino rats deprived of the thyroid and parathyroid, or of the parathyroid glands alone at 100 days of age and then allowed to grow until 150 days of age. The response was a retardation in growth of the parts measured. From the quantitative standpoint the growth of the females was retarded or obstructed to a greater degree by the experi-

mental procedures than was that of the males. It would appear from this that the female rat is more dependent on the stabilizing influence of the thyroid and parathyroid glands in growth than are the males.

Acetonitril Test for Thyroid—The acetonitril test was developed primarily in connection with a study of thyroid which was to be administered as a drug by mouth. It has served a useful purpose in various ways. Hunt's experiments confirm and extend the work previously reported as to the marked effects of diet on the resistance of mice to acetonitril, they also indicate that vitamins may be concerned in this action. Earlier work showing a very close parallel between the physiologic activity of thyroid (as determined by the acetonitril test) and the iodine content is fully confirmed, this has been found to be true for the thyroids of a number of species of animals and for thyroids with extreme ranges in iodine content, for the thyroid in exophthalmic goiter (with one exception) for thyroid iodized *in vivo* and for fetal thyroids (with the exception of one abnormal gland). The physiologic activity of thyroid both by feeding and by intravenous injection is (expressed in terms of iodine content) less than that of thyroid. No evidence of the presence of physiologically inactive iodine in the thyroid was found (except in the case of two abnormal glands). Additional experiments are reported showing that the blood in certain pathologic conditions (especially those in which the thyroid is involved, but also in nephritis) contains unknown, or unidentified, substances which markedly increase the resistance of mice to acetonitril.

Condition of Glomerulus During Renal Secretion—The results of Woodland's experiments are reported completely to disprove the statement of Brodie and Mackenzie that during normal diuresis fluid is contained in the capsule and to invalidate their conclusion that the glomerular epithelium secretes urine. The only alternative suppositions are that the glomerulus either filters urine or has nothing whatever to do with the actual production of urine. Woodland believes that the whole of the urine is secreted by the tubular epithelium, the encapsulated glomerulus acts solely to reduce pressure and retard current while maintaining volume (in other words, it has the same effect on the blood stream as a waterfall has on a river) and is a device necessitated by the proximity of the kidneys to the aorta—the seat of maximum arterial pressure.

American Journal of Public Health, Detroit

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- Health Officer's Challenge to General Practitioner J D Robert on Chicago—p 1
- Channel and Some Shoals in Municipal and State Child Hygiene Administration M E Champion—p 6
- Important Considerations in Relation of Food to Disease J C Ceiger Chicago—p 10
- Tuberculosis Demonstration Plans of Milbank Memorial Fund D B Armstrong—p 14
- Place of Proteins in Diet in Light of Newer Knowledge of Nutrition H H Mitchell—p 17
- Control of Diphtheria W H Park M C Schroeder and A Zingher New York—p 23
- Importance of Epidemiology as Function of Health Department W H Frost Baltimore—p 33
- Service B L Arms—p 37

American Journal of Roentgenology and Radium Therapy, New York

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- Newer Investigations of Problem of Roentgen Ray Dosage O Glaeser Baltimore—p 1
- Problem of Roentgen Ray Dosage W Friedrich Freiburg Germany—p 6
- Intestinal Reaction to Erythema Dose C L Martin and F T Loefer Dallas Tex—p 11
- Important Points in Technique of Roentgenologic Examinations of Urinary Tract B H Nichol Cleveland—p 17
- New Light on Gastric Peristalsis W C Alvarez San Francisco—p 31
- *Bone Lesions of Smallpox Report of Cases F B Shellen Fresno Calif—p 35
- Diagnosis and Treatment of Bone Lesions J C Blocker Dallas Tex—p 42
- Ionization Measurement G Failla New York—p 49
- Comparative Measurements Between Radium and Potassium Gamma Energy Absorbed at Depth Casford Stenstrom Buffalo New York—p 51

Results and Technic in Treatment of Carcinoma of Breast by Radiation B J Lee New York—p 62
Automatic Switch for Bucky Diaphragms E V Powell New York—p 67
Use of Bucky Potter Diaphragm with Fluoroscope W C Alvarez San Francisco Calif—p 69
Effect of War on Development of Roentgenology P M Hickey Ann Arbor Mich—p 70

Gastric Peristalsis—Alvarez says that new evidence has been obtained as to the location and behavior of the gastric pacemaker. Stomach blocks and dissociations have been observed. Cole's discovery of gastric systoles has been confirmed. Several peculiar types of peristalsis are described, and some contractions are shown which might perhaps be called, by analogy, pyloric extrasystoles. Two or three different types of contraction can take place simultaneously in one segment of the stomach much as they do in one segment of bowel. There is a close relation between the activities of the pyloric end of the stomach and the duodenum.

Bone Lesions of Smallpox—In one of the cases reported by Sheldon, the woman, a Chinese, had had smallpox when 3 or 4 years of age. At the time she was seen she had deformities of both wrists and shortening of the right humerus and the bones of the right forearm. The ulna in each forearm appeared to be longer than the corresponding radius, causing deformities of the wrists. The second patient a Chinese, aged 67, entered the hospital for pains in the feet. Roentgenograms showed fusion of the distal extremities of the tibia and fibula. These also were fused with the astragalus. The first and fifth metatarsals of both feet showed shortening. Under the fluoroscope, deformities of the hands and right elbow were noted. Films of the right elbow show complete absence of articulation, and complete fusion of all bones. So complete is this fusion that the medullary canal of the humerus can be followed directly into that of the radius and that of the ulna. The left hand showed marked shortening of the fifth metacarpal, and also a smaller shaft than the right fifth metacarpal. The right hand showed shortening of the first, second, and fifth metacarpals. Of these short metacarpals, only one has a smaller shaft than normal. The history of this man showed no bone injury, no evidence of inflammatory troubles, and no pains or aches until within the last six months but there was a history of smallpox sixty-four years previously. Both patients being Chinese, Sheldon asks "Is the particular variola of the Orient different from that of the Occident, or are we simply not recognizing these cases?"

Annals of Surgery, Philadelphia

January 1923, 77, No 1

- *Cancer of Larynx Is It Preceded by Recognizable Precancerous Condition? C Jackson Philadelphia—p 1
- *Arterial Decortication C L Callander San Francisco—p 15
- *Peri Arterial Sympathectomy E P Lehman St Louis—p 30
- *Aluminum Potassium Nitrate in Treatment of Suppurative Conditions Particularly Osteomyelitis M Thorek Chicago—p 38
- *Cholecystostomy Versus Cholecystectomy J C O'Day Honolulu Hawaii—p 48
- *Cholelithiasis Cholecystitis and Cholangitis A B Keyes Chicago—p 52
- *Certain Aspects of Surgery of Gallbladder O F Lamson Seattle—p 64
- *Case of Retention Cyst from Liver Review of Literature J F Jones Philadelphia—p 68
- *Colloid Carcinoma D Parham Rochester Minn—p 90
- *Bone Tumors Metastasis to Lungs from a Pure Malignoma J C Bloodgood Baltimore—p 106

Precancerous Stage of Cancer of Larynx—If it is admitted that certain curable laryngeal conditions are in some cases the sequential predecessors of incurable cancer, Jackson says it is clearly the duty of the physician not only to eradicate those curable precancerous conditions but to contribute to their early recognition by applying to them the term precancerous, however faulty such a word may be from a purely scientific histologic point of view. From a clinical point of view, continual laryngeal irritation from any cause in a person of cancerous age may be regarded as clinically precancerous in the sense that these conditions may be contributory factors in the etiology of cancer and as such should be cured surgically or otherwise.

Results of Arterial Decortication—Ten arterial decortications were performed by Callander on six patients. For one of these patients three arteries were decorticated for disease of three extremities, while for another patient the operation was performed on two arteries for trouble in two extremities. In the spastic group of three cases no improvement can be recorded. In the three cases in which an obliterative arteritis seemed to play the predominant role, one definite cure is recorded. In one of these cases no improvement followed the operation, and the patient died later from an ascending gangrene of the extremity. In the third case, no improvement followed the operation, and the gangrene remained as before intervention. In a case of pain in the thumb, the pain disappeared following the operation, but for it there was substituted another pain in the flexor group of muscles. This pain later likewise disappeared, and there has been no recurrence of the symptoms.

Perivascular Sympathectomy—Lehman concludes that the "perivascular sympathectomy" of Leriche in the dog does not result experimentally in the physiologic changes in the extremity which he described in clinical cases, and the vasodilation from proved total sympathectomy does not affect wound healing.

Colloid Carcinoma—Two hundred and three cases of colloid carcinoma of the gastro-intestinal tract are analyzed by Parham. Colloid carcinomas occurred in the stomach (65 per cent), cecum (22.2 per cent), appendix (7.0 per cent), transverse colon (7.3 per cent), sigmoid (4.3 per cent), rectum (5.5 per cent), pancreas (two cases), gallbladder (8 per cent), salivary glands (one case), bladder (2.5 per cent), prostate (one case), kidney (one case), ovary (1.1 per cent) and breast (1.12 per cent). Peritoneal carcinomas occurred in 16 per cent of all cases. Colloid carcinoma is usually slow of growth and late to metastasize to glands and other organs. It often grows by permeation and may cause extensive thickening of the wall of the affected organ. Local glands are often involved long before metastasis has reached distant glands. Though histologically less malignant on account of permeation of adjacent tissues, it is particularly difficult to eradicate. Death is often delayed, but the eventual mortality is greater than in other types of carcinoma. Recurrence is often entirely localized to the site of origin. Many patients with colloid carcinoma respond remarkably well to treatment by roentgen ray and radium.

Archives of Internal Medicine, Chicago

January 1923 31, No 1

- *Carbon Dioxid and Oxygen Content of Stomach Gas in Normal Persons A D Dunn and W Thompson Omaha—p 1
- *Chemotherapy of Bacterial Infections II Chemotherapy of Experimental Localized Bacterial Infections with Special Reference to Pleuritis J A Kolmer Philadelphia—p 9
- *Experimental and Clinical Study of Quinidin Sulphate I Experimental H M Korns Cleveland—p 15
- *Experimental and Clinical Study of Quinidin Sulphate II Clinical H M Korns Cleveland—p 36
- *Technic of Determination of Velocity of Arterial Pulse Wave C Lundsgaard and O Beyerholm Copenhagen Denmark—p 56
- *Relation Between Ingested Fat and Lipemia of Diabetes Mellitus P L Marsh and H G Waller Ann Arbor Mich—p 63
- *Defects in Membranous Bones Diabetes Insipidus and Exophthalmus, Report of Case L C Grosh and J L Stifel Toledo Ohio—p 76
- *Orthopnea C D Christie and A J Beams Cleveland—p 85
- *Effect of Olive Oil on Gastric Function as Measured by Fractional Analysis B C Lockwood and H G Chamberlin Detroit—p 96
- *Basal Metabolism in Dementia Praecox and Manic Depressive Psychoses C E Gibbs and D Lemeke New York—p 102
- *Hippuric Acid Synthesis as Test of Renal Function S Morgulis G P Pratt and H M Jahr Omaha—p 116
- *Edema Associated with Moderate Bicarbonate Administration During Convalescence from Pneumonia C A L Binger A B Hastings and J M Neill New York—p 145

Carbon Dioxid and Oxygen Content of Normal Stomach Gas—Evidence was obtained by Dunn and Thompson that atmospheric air introduced into the stomach tends to come into equilibrium with the blood gases within one hour in the case of carbon dioxid and considerably later, if at all, in the case of oxygen. All the carbon dioxid found in the stomach gas of normal persons whether fasting or after a full meal, can be accounted for by secretion or diffusion from the gastric mucosa. In the study of stomach gas occurring in pathologic

conditions, an upper normal limit of at least 9 per cent carbon dioxide tension must be postulated

Chemotherapy of Bacterial Infections—Studies with ethyl-hydrocuprein hydrochlorid (optochin) in the treatment of experimental pneumococcus pleuritis and meningitis, Kolmer states, have indicated that in chemotherapeutic investigations in bacterial infections localized infections of serous cavities offer a more favorable means for eliciting therapeutic effects of a medicament than do generalized infections and bacteremias. In localized infections of serous cavities it is possible to inject into the sacs sufficient amounts of medicament to render the contents bactericidal and curative. These amounts may be at least one half the maximum tolerated doses. In rapidly fatal generalized infections with bacteremias, however, the intravenous injection of one half the maximum tolerated dose may be without therapeutic effects. Localized bacterial infections of serous cavities would appear to be especially useful for chemotherapeutic studies with medicaments possessing high toxicity when the margin between dosis tolerata and dosis curativa is small. In the production of localized infections of such serous cavities as the subarachnoid space, pleural sacs and pericardium, test animals possessing some natural immunity to the test bacterium should be chosen like the guinea-pig for pneumococcus pleuritis and pericarditis, the cat or dog for pneumococcus meningitis and the dog or rat for tuberculous pleuritis. The test micro organism should be of moderate rather than extreme virulence, in order to reduce the invasiveness or aggressiveness of the bacteria for the blood and other organs.

Experimental Study of Quinidin Sulphate—Korns reports in detail the results of experiments made for the purpose of studying some of the effects of quinidin on the normal dog and guinea-pig heart.

Clinical Study of Quinidin Sulphate—Detailed reports are made by Korns of seven successful and six unsuccessful cases of auricular fibrillation treated with quinidin sulphate. The result attained by the use of quinidin in a case of ventricular paroxysmal tachycardia is also described. Clinical evidence is presented which lends support to the theory that the action of quinidin in abolishing circus movement is not conditioned by the type of cardiac lesion, degree of decompensation, duration of fibrillation, etc., but is essentially related to the pathologic physiology of the auricular muscle. The most important contribution of quinidin to clinical cardiology is that it provides a means by which the role of auricular fibrillation in myocardial failure may be quantitatively estimated. Quinidin is universally a heart muscle poison. In each patient an estimate of this effect must be weighed carefully against the expectation of benefit to be derived from restoration of normal sinus mechanism. Indications for the use of digitalis and quinidin are entirely separate and clearly defined. Electrocardiograms made before and after resumption of normal rhythm are analyzed.

Relation Between Ingested Fat and Lipemia of Diabetes Mellitus—March and Waller noted the effect on the lipemia of diabetic patients of the high fat, low protein low carbohydrate diets described by Newburgh and Marsh. The patients selected for this study represented a number of different types of diabetes mellitus varying in age, severity of the disease, duration of diabetic symptoms, previous treatment, degree of acidosis. From an examination of the records of these patients it is apparent that there was no increase in the lipid content of the blood during the periods of observation, and, of much greater significance, that in the patients in whom a hyperlipoidemia existed when they first came under observation the total fat fell to approximately normal levels. It is regarded by Marsh and Waller as being very strong evidence that the prevalent assumption which postulates that diabetic hyperlipoidemia is dependent on the excessive ingestion of fat is unwarranted. The explanation of this phenomenon must be sought in some other unusual feature of the diabetic state.

Membranous Bone Defects, Diabetes Insipidus and Exophthalmos—A case is reported by Grosh and Stifel exhibiting some degree of dwarfism, diabetes insipidus, defects in the membranous bones of the skull and pelvis and exophthalmos.

Pituitary extract, administered hypodermically, controlled the polyuria temporarily. After a time the effect of pituitary extract diminished. It had no effect on the bone defects.

Orthopnea—Christie and Beams divide orthopnea into (1) orthopnea of necessity and (2) orthopnea of choice. Orthopnea cannot exist without reduction of the vital capacity. If the original loss from disease is great and the patient loses an additional amount on lying down there will be orthopnea of necessity. 'Orthopnea of choice' is more common and exists when the original loss from disease is smaller or the percentile loss as a result of posture is not so great. Some patients with as great reduction in their vital capacity from disease as is seen in orthopnea of necessity do not become orthopneic.

Effect of Olive Oil on Gastric Function—The experiments made by Lockwood and Chamberlin demonstrate that olive oil, given before meals, as is usually done clinically, reduces the average total acidity about 12 per cent and lowers the high point of the curve about the same degree. It causes a marked delay of the test meal in the stomach and the oil is the last portion of the meal to be evacuated. When oil is given regurgitation of bile is five times as frequent as without it.

Basal Metabolism in Psychoses—Definitely abnormal basal rates were found by Gibbs and Lemcke in psychotic patients in the more acute phases of their psychosis. The variations from normal were greater in dementia praecox patients than in cases of manic-depressive insanity. The patients did not show sufficient evidence to explain satisfactorily the findings in terms of thyroid or pituitary disorder. Several of the dementia praecox patients did show some evidence of disturbed growth including incomplete sex maturity. Thyroid by mouth raised the rate to normal in two cases of manic depressive depression but did not do so in a case with more marked constitutional psychopathic features. No immediate mental improvement followed thyroid in these three cases.

Hippuric Acid Synthesis as Test of Renal Function—In normal persons benzoic acid administered either as the acid or its salt is completely synthesized to hippuric acid and the kidney is stimulated to enhanced activity. In nephritic and cardiorenal patients the synthesis is never complete and the kidney is apparently fatigued by the excessive exertion. The benzoic acid passing in the urine is not all conjugated with glycol to form hippuric acid. A variable portion appears as the uncombined acid or as its salts. The unconjugated part of the benzoic acid can be reduced to an entirely negligible amount on a diet of milk and toast. Following the ingestion of a large dose of benzoic acid or sodium benzoate the free benzoic acid in the urine invariably increases though to a very variable degree in different individuals. The increase is particularly great in patients with definite kidney affection. In all the patients whom Morgulis and his associates examined the amount of hippuric acid synthesized in twenty four hours, following the ingestion of a standard dose of benzoic acid or sodium benzoate ranged from 53 to 95 per cent while from 59 to 100 per cent of the benzoic acid administered could be recovered in the urine. In one group of patients the recovery of benzoic acid has been almost the same as in normal subjects but the hippuric acid synthesis was less than in the normal owing to the fact that a large amount of the benzoic acid was excreted in unconjugated form. In another group of patients both the elimination of total benzoic and of hippuric acid falls much below that in the normal subject. The free benzoic acid in the urine following a dose of the acid is apparently greater in the nephritic than in the cardiorenal cases. Clinically the method will in all probability not find extensive application or favor because it involves much work and in order to secure reliable results the patient's regimen must be supervised very closely.

Edema Associated with Bicarbonate Administration in Pneumonia—The case studied by Binger and others was one of lobar pneumonia in which an average of 57 gm. sodium bicarbonate had been given for a period of thirty five days prior to admission to the hospital. The patient showed intense cyanosis with marked oxygen saturation of the arterial blood, rapid but

and evidence of alkalosis (blood pH 7.55). Oxygen therapy largely relieved cyanosis and dyspnea. Immediately thereafter the patient began to excrete retained bases and water. Diminution of edema was accompanied by gradually increasing lung volume and return to normal type of respiration. No definite impairment of kidney function could be established. At the time of discharge from the hospital, the patient's blood oxygen, carbon dioxide content, and pH were normal, the urine pH was normal, and the urine was free from albumin and casts. The case is reported to show that definite untoward results may follow the administration of sodium bicarbonate and to point out the character of certain of these untoward results.

Boston Medical and Surgical Journal

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- Basal Metabolism of Young Girls F G Benedict Boston—p 127
Pasteur—Scientist Believer Democrat C W Eliot—p 138
Nicolaas Tulp and Rembrandt's Painting Anatomical Demonstration by Tulp C G Cumston Geneva, Switzerland—p 143

Bulletin Lying-In Hospital of City of New York

January 1923 12, No 3

- *Fundamental Cause of Splanchnoptosis Abdominal Incompetence A Developmental Factor II Study of Certain Details of Prenatal Evolution of Abdomen With Special Reference to Status at Term A C Victor Boston—p 139
*Treatment of Cardiac Failure During Pregnancy H E B Pardee New York—p 207
Analysis of Cases of Bacteremia Occurring at Lying In Hospital M Rosensohn, New York—p 214

Cause of Splanchnoptosis—Victor endeavors to demonstrate anatomically and experimentally that the fundamental cause of visceral ptosis is abdominal incompetence and that this is a developmental factor, that consequently, the retention of the viscera in their normal positions depends on the development of normal competence of the abdomen, and that failures in the normal development of this abdominal competence and visceral retention are correlated with the development of certain departures from the normal body form—the most constant of these departures being the retracted lower thorax.

Cardiac Failure During Pregnancy—The important feature of heart disease during pregnancy, Pardee says, is the degree of cardiac failure. If this is slight the disease is of little importance. Even with a moderate degree of failure it will be possible for the child to be born if the mother is allowed to take a risk which is not so great as sometimes stated. The first attack of severe decompensation can usually be recovered from with proper treatment, unless the attack should occur during labor. With proper observation and prompt operation, severe decompensation should not occur during labor. Abdominal section is the operation of choice in the emergency provided a low forceps delivery cannot be done. Ether anesthesia, started by chloroform, is a better anesthetic for these patients than gas oxygen. Oxygen inhalations from a mask are helpful to clear up persistent cyanosis. Without severe cardiac failure or after recovery from it most patients can be carried through to term or to an induced labor during the eighth month. During labor, the attendant should watch for a pulse over 95 or respiration over 25 per minute, precordial discomfort, dyspnea, cough, and should not allow these small signs to become big before he puts an end to the labor. In treating lesser grades of failure during pregnancy, the patient must rest enough to spare the heart from overstrain but this may not necessitate rest in bed for more than a short time. Digitalis should be given in doses sufficient to insure effect. With this treatment Pardee feels sure it will be possible to diminish the present mortality of about 25 per cent for severe cases and 10 per cent for all cases to a figure which is less disquieting.

Endocrinology, Los Angeles

November 1922 6 No 6

- Invitation to Research in Endocrinology W B Cannon Boston—p 70
Glandular Saus of Brown Multilocular Adipose Tissue A T Kamm Minneapolis—p 769
Recent Progress of Testicle Transplantation in Surgical Practice I Chalmers Report of New Method M Thoburn Chicago—p 71

- Steinrach Operation Report of Twenty Two Cases with Endocrine Interpretation H Benjamin New York—p 776
*Analysis of One Thousand Testicular Substance Implantations L L Stanley, San Quentin, Calif—p 787
Pathogenesis of Thyrotoxicosis Part 2 N W Janney Los Angeles—p 795
*Positive Achievements of Endocrinology A S Blumgarten New York—p 811

Results of Testicle Substance Implantation—The results of 1,000 implantations of animal testicular substance in 656 human subjects, including seven females, are reported by Stanley. The greater number of subjects received only one injection, although some received as many as seven injections. Striking objective improvement was seen in numerous cases of general asthenia, acne vulgaris, asthma and senility. Subjective or objective improvement was seen in various cases of rheumatism, neurasthenia, poor vision and a few other conditions. The results, as a whole, are tabulated. In general, testicular substance seems often to have a beneficial effect in relieving pain of obscure origin and in the promotion of bodily well being. The operation is practically painless and harmless. The testicular substance was cut into strips with a knife or cork-borer, in sizes suitable for filling the pressure syringe. This instrument is similar to the one devised by Beck for paraffin injection. By means of a dental syringe with a No 16 needle, $3\frac{1}{2}$ inches long, the semisolid testicular substance was injected underneath the skin of the abdomen. There were comparatively few sloughs, and the patient was not subjected to a week's hospital inconvenience. The testicles of goats, rams, boars and deer have been used. So far as can be determined, there is very little difference in the effects produced by testicular material obtained from the different animals.

Positive Achievements of Endocrinology—The progress in endocrinology is divided into several categories by Blumgarten: (1) progress in the well established syndromes of the various ductless glands, (2) contributions of endocrinology toward various nonspecific branches of medicine, (3) contributions to therapy, and (4) contributions to public health. Each item is discussed. The progress made in the treatment of endocrinopathies and in organotherapy, in general, is reviewed from the standpoint of what has been established, in other words, the actual accomplishments. Of the pharmaceutical products obtained from the ductless glands only specific substances are mentioned. Speaking of pluriglandular therapy, Blumgarten says: "It seems to me highly unscientific to prepare shotgun combinations of gland substances in the hope that the body will extract from these combinations those that it needs. The only way progress will ever be made in rational organotherapy is to be able to recognize specific deficiencies and to supply effective substances for these deficiencies. If more than one deficiency is present they should be individually recognized and two or more corresponding substances given."

Georgia Medical Association Journal, Atlanta

January 1923 12, No 1

- Overmedication in Infants and Children B Bashinski Macon—p 1
Complemental Breast Feeding L Gerdine Athens—p 4
Antitoxin and Intubation in Diphtheria W N Adkins Atlanta—p 8
Control of Common Contagious Diseases J A Wood Atlanta—p 12
Importance of State Pediatric Society as Component Part of State Medical Association W A Mulhern Augusta—p 19
Treatment of Congenital Syphilis in Children J Yampolsky Atlanta—p 23
Complete versus Subtotal Hysterectomy G W Quillian Atlanta—p 26
Asthma A H Bunce Atlanta—p 29
Report of 1000 Obstetric Cases in Private Practice J T Benson Atlanta—p 31

Iowa State Medical Society Journal, Des Moines

January 1923 13 No 1

- Control of Circulation G Kessel Cresco—p 1
Tumors of Breast W Jepson Sioux City—p 5
Surgery of Thyroid P A White Davenport—p 11
Obstetric Problems Involved in Stillbirths and Deaths of New Born Infants C S Bacon Chicago—p 15
Recent Progress in Treatment of Chronic Empyema C A Hedblom Rochester Minn—p 21
Never Aspects of Urinary Surgery D N Eisendrath Chicago—p 25

Journal of Cancer Research, Baltimore

April 1922 7 No 2

- *Biologic Evidence for Inheritability of Cancer in Man XVIII M Slye Chicago—p 107
Acidosis Alkalosis and Tumor Growth William H Woglom New York—p 149
Fibro sarcoma of Skin in a Gold Fish (*Carassus Auratus*) J F Schamberg and B Lucke Philadelphia—p 151
Action of Buried Tubes of Radium Emanation on Neoplasias in Plants I Levin and M Levine New York—p 163
Role of Neoplasia in Parasitic Diseases of Plant I Levin and M Levine New York—p 171

Inheritability of Cancer in Man—Cancer and noncancer tendencies segregate out and are transmitted as such therefore Slye maintains, they are unit characters A specificity of tissue type in specific organs from ancestor to offspring segregates out and is transmitted as such It is, therefore a unit character Since these things are unit characters, it is possible to manipulate them by selective breeding and thereby to implant them indelibly in any species or to eliminate them permanently and completely from any species Cancer and noncancer behave like the absence and presence respectively of a mechanism fitted to control proliferation and differentiation in regenerative processes and an animal either has this mechanism or lacks it, no matter to what species he may belong There is, therefore, a ready and certain genetic method of escape from cancer for the individual and for the race The demonstration of the inheritability of cancer and noncancer tendencies in mice, Slye believes, is a demonstration of the inheritability of these tendencies in man and in all other species which show cancer if the theory of evolution is to be maintained and the existence of a biologic law is admitted From the procedure of analyzing stock into its unit characters in order to manipulate the cancer tendency, there has emerged the fundamental law of heredity—"What goes into the germ plasm must come out in the offspring"

Journal of Pharmacology and Experimental Therapeutics, Baltimore

January 1923 20 No 6

- Importance of Suprarenal Glands in Action of Pilocarpin Physostigmin and Strychnin C W Edmunds Ann Arbor Mich—p 405
*Investigation into Chemotherapy of Acridine Dyes in Experimental Tuberculosis M I Smith Washington D C—p 419
Toxicity and Actions of Normal Butylamines P J Hanzlik San Francisco—p 435
Pharmacologic Properties of Some Iso-Urea Derivatives S Basterfield Saskatchewan Canada—p 451
Comparative Stimulant Efficiency of Some Local and Systemic Agents on Normal and Depressed Respiration and Irritant Efficiency of Some Agents P J Hanzlik San Francisco—p 463
*Studies on Pharmacology of Sodium Citrate I Influence of Sodium Citrate on Respiration and Circulation W Salant and N Kleitman Augusta Ga—p 481

Chemotherapy of Acridin Dyes in Experimental Tuberculosis—The acridin derivatives, acriflavine proflavine and their silver compounds acridinum yellow, and acridin orange, Smith finds, possess a high degree of inhibition on the growth of the tubercle bacillus in vitro These substances do not alter the pathogenicity of the tubercle bacillus when exposed to their action at 38 C for forty-eight hours Experiments made to determine whether the serum of animals treated with proflavine would show inhibiting or bactericidal properties for the tubercle bacillus yielded negative results Proflavine, acriflavine and the silver compound of the latter were applied in the treatment of experimental tuberculosis in the guinea-pig and in the rabbit No effect on the tuberculous process was noted

Influence of Sodium Citrate on Respiration and Circulation—The results presented by Salant and Kleitman show that sodium citrate may be both a stimulant and a depressant Small and medium doses of sodium citrate stimulated respiration in dogs, cats and rabbits under urethane anesthesia Such doses may cause stimulation or depression of respiration in dogs anesthetized with chlorotone Small and medium doses given to dogs when morphin ether narcosis was employed were without any effect on respiration in some experiments, while in others the action was the same as under chlorotone anesthesia Respiration was depressed or paralyzed by large doses of citrate even when injected directly into the circulation, and by medium doses when injected at

short intervals Transitory acceleration of respiration occurred when large doses of citrate were injected intramuscularly in unanesthetized animals also when injected subcutaneously into decerebrated and into unanesthetized animals Respiration was only slightly accelerated or was slowed by citrate given after double vagotomy Small and medium doses of citrate were without effect or produced only a slight fall of blood pressure in dogs under chlorotone or urethane anesthesia A fall or a rise of blood pressure may occur when citrate is given to dogs under morphin ether narcosis Small and medium doses of citrate given intravenously to cats under urethane anesthesia produced a fall of blood pressure of from 30 to 60 per cent

Journal of Radiology, Omaha

January 1923 4 No 1

- Bone Cysts (Ostitis Fibrosa) Variety—Polycystic Ostitis Fibrosa J C Bloodgood Baltimore—p 1
Principles of Stereovision J B Wantz Chicago—p 9
Weight Development in White Rats as Influenced by Roentgen Ray Exposure S E Sander on Detroit—p 13
Problem of High Potential Measurement as Associated with Deep Therapy at High Voltages F Rieber San Francisco—p 15

Kansas Medical Society Journal, Topeka

January 1923 23 No 1

- Organic vs Functional Disease G E Paine Hutchinson—p 1
Visual Field in Functional Nerve Diseases H L Seibles Hutchinson—p 2
Kahn Precipitation Test for Syphilis W Levin—p 4
Heredity T A Stevens Caney—p 6
Focal Infections B P Smith Neodesha—p 9

Maine Medical Association Journal, Portland

January 1923 13 No 6

- Treatment of Essential Hypertension M C Webber Portland—p 147
Surgical Strategy as an Adjunct to Local Anesthesia in Abdominal Surgery R E Farr Minneapolis—p 156

Military Surgeon, Washington, D C

January 1923 52 No 1

- Safety in Aviation W H Wilmer—p 1
Progress in Aviation Medicine During 1921 L H Bauer—p 9
Further Observations on Cardiovascular Physical Fitness Test F C Schneider—p 18
Oxygen Exhaustion of Blood as Factor in Flight Limitations C W Greene and C H Greene—p 28
Experimental Analysis of Cause of Occasional Fainting and Collapse in Official Air Service Test C W Greene and N C Gilbert—p 31
Eye in Aviation—Some Experience in Work of Department of Ophthalmology Medical Research Laboratory Third Aviation Instruction Center A E F France C Berens Jr—p 35
Aviation Problems in Navy A S Armstrong—p 49
Selection of Aviation Personnel P O Northington—p 53
Medical Aspects of Naval Gas Warfare G H Mankin—p 60
Medicine in Revolt of Sixteenth Century—Historical Sketch H M Brown—p 65
I Determination of Specific Preventive Immune Bodies Produced in Blood as Result of Preventive Typhoid and Paratyphoid B Inoculations II Notes on Relation Between Preventive Inoculations and Status Lymphaticus B Tanabe—p 83
Reminiscence of Battle of Borodino W W Keen—p 97
Fleet Surgeon—Some Thoughts on His Official Relationship and Opportunities for Useful Service W H Bell—p 98

New Jersey Medical Society Journal, Orange

January 1923 20 No 1

- Present Status of Diabetic Treatment F M Allen Morristown—p 1
Foreign Bodies in Air and Food Passages H B Orton Newark—p 15
Reasons for New Higher Voltage Shorter Wave Length Roentgen Therapy T T Stevens Montclair—p 19
Subacute Bacterial Endocarditis in a Boy Fifteen Years Old F C John on New Brunswick—p 23

Oklahoma State Medical Association Journal, Muskogee

January 1923 16 No 1

- Appendicitis and Appendiceal Colic I D Le—p 1
Acute Appendicitis A S Risser Blackwell—p 1
Acute Appendicitis in Children M E Stou—p 1
Cardiogram J C Braswell Tulsa—p 1
Fever Manifestations in Early Syphilis C—p 17
Case of Foreign Body (Chewing Gum) Lithotrite J C Mraz Oklahoma—p 2

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Jan 20 1923 1, No 3238

Practical Difficulties in Obstetrics and Gynecology C Berkeley—p 89
Diagnosis of Indefinite Masses in Breast D C L Fitzwilliams—p 94
Minor Traumatic Disabilities of Upper Limb P J Verrall—p 97
Dosage of Radium D Turner—p 100

*Function of Suprarenal Glands and Relation to Concentration of Hydrogen Ions R McCarrison—p 101

*Embolism of Right Brachial Artery as Complication of Lobar Pneumonia A H D Smith—p 103

*Blood as Guide to Early Diagnosis in Lead Poisoning R Craik—p 103

State of Suprarenal Glands in Inanition—The observations recorded by McCarrison are said to provide evidence that (a) the enlargement—with increased epinephrin content—of the suprarenal glands in inanition and in avitaminosis may be correlated with the acidosis which is associated with these states. Its occurrence during the terminal phases of avitaminosis, its association with marked respiratory disturbances, with falling body temperature, and with interference with oxygenation, and its rapid disappearance on the provision of the missing vitamins, suggest that it is an emergency effort on the part of the suprarenal glands. (b) The attempted exercises of emergency function by the suprarenal glands may be expected to occur in all conditions of alkalosis or of acidosis.

Embolism of Right Brachial Artery as Complication of Lobar Pneumonia—The crisis in Smith's case came on the ninth day. Convalescence was uneventful until the fourth day, when symptoms of acute tuberculous infection of the right lung were manifested. About ten days later, during the night, the patient was seized with very acute pain in the right arm. Examination of that arm showed no apparent difference from the other. There was, however, severe pain with paresis of the muscles. The hyperesthesia extended from the wrist to the shoulder. There was almost complete anesthesia in the tips of the thumb and fingers. The right radial pulse was absent both to the finger and to the stethoscope. Following the course of the radial upward no pulsation could be felt in the antecubital fossa. At the level of the posterior wall of the axilla, in the line of the vessel, a very tender lump about the size of a small hazelnut could be felt. Above this level the vessel could be felt pulsating strongly. The radial pulse in the left side was present and bounding in type. The appearance of the arm did not change. The patient was profoundly intoxicated, delirium became marked, and night sweats became very heavy. The cough was lessened, but the physical signs in the lung were still those of acute phthisis. In a few days definite signs of endocarditis were present. The diagnosis was septic endocarditis following lobar pneumonia, with embolism of the brachial artery as a complication.

Blood as Guide to Early Diagnosis in Lead Poisoning—In the absence of serious anemia, Craik says that punctate basophilia is more likely to be caused by lead than by anything else. Basophilia is pathologic and demands investigation. So long as it is present something is acting injuriously on the marrow, if this is lead the urine will contain a trace of the metal even in the absence of other symptoms. Craik suggests that a diagnosis of lead poisoning should depend, not on gross signs but on appreciation of suspicious symptoms and on an investigation of the blood and urine.

Jan 27 1923 1, No 3239

Some Problems of Prostatectomy J T Walker—p 133
Surgical Treatment in Cases of Pulmonary Tuberculosis H M Davies—p 138

Diminished Lungs and Bronchiectasis C Riviere—p 141
Unusual Case of Typhoid Spine with Symptoms of Spinal Cord Affection H Turner—p 142

Treatment by Diathermy W J Turrell—p 143
The Postoperative School of Medicine R O Moon—p 145

Unusual Case of Typhoid Spine with Symptoms of Spinal Cord Affection—In November 1919 Turner's patient developed typhoid. In February 1920 he began to suffer from pain in the back. In December 1920 he went through an

attack of recurrent fever. He began to lose power in his legs in March, 1921. Standing or walking were impossible. There were distinct signs of partial spinal cord compression in the form of ankle and patella clonus, Babinski signs, rigidity of muscles and weakness of the lower limbs, loss of sense of position in the toes, hyperalgesia at the level of the seventh to eighth dorsal segments, and hyperesthesia of all kinds below, ataxic paresis of the lower limbs, no disturbance of the bladder or rectum. Examination of the spine showed an ill defined swelling between the shoulder blades between the fifth and seventh dorsal spinous processes. The integument in the same region was edematous and reddened. Fluctuation was distinct. Palpation of the spine inflicted great pain, especially in the lateral parts of the vertebrae. On opening the abscess, slightly odorous grey-green pus was found, from which a pure culture of typhoid bacillus was obtained. The cavity of the abscess was located to the right of the spinous processes, and led deeply toward the corresponding laminae. The subsequent course of the case was favorable, although the spinal cord symptoms subsided very slowly. Turner asserts that this is the only positive case of typhoid spondylitis complicated by suppuration.

Journal of Tropical Medicine and Hygiene, London

Jan 1 1923 26 No 1

Castellani's Bronchomoniliasis. Report of Case with Pneumonic Onset and Peculiar Clinical Course N Farah—p 1

1 Preliminary Training for Colonial Medical Services E P Minett—p 5

Case of Combined Pellagra and Beriberi R W Mendelson—p 6

*Treatment of Leprosy by Intravenous Injection of Chaulmoogra Oil P Harper—p 7

Jan 15 1923 26 No 2

Tonsillomycosis A Castellani M Douglas and T Thomson—p 19

Researches on Rickettsias and Etiology of Typhus Fever J De Sousa and A Guimarães—p 24

Dengue vs Malaria R E Ingram Johnson—p 27

Treatment of Leprosy by Injection of Chaulmoogra Oil—Altogether 265 cases of leprosy at Makogai (Fiji) are, or have been, under treatment by the intravenous injection of chaulmoogra oil for periods of from a few weeks to two years. Forty thousand intravenous injections of the oil have been given without any serious mishap. The results reported by Harper are: dead 11 patients, of whom 5 were very aged, improved, 28, including 15 discharged from the asylum, unchanged, 195, worse, 31. Of other attempts at specific treatment, Harper says: Intravenous injection of tartar emetic is useless for leprosy. Of four cases treated by sodium hydnocarpate, two have become worse and two have remained unchanged. Of eight cases treated by sodium morrhuate, none showed any improvement and one became worse. Moogrol was used intravenously and intramuscularly on ten patients, of whom four became worse and six remained unchanged. Harper is now trying tuberculin. So far he believes it to be useless as no patient has yet shown signs of improvement. Harper's conclusion is that treatment by intravenous injection of chaulmoogra oil is of value in early cases and is preferable to treatment by sodium gynocardate, sodium hydnocarpate, or sodium morrhuate. The moogrol brand of ethyl esters of chaulmoogra oil is too painful for intramuscular use, but is much more easily borne intravenously (in doses of 10 minims daily) than the crude oil. Whether the esters are as potent for good as the crude oil is not yet certain. He gives from 5 to 10 minims of the crude chaulmoogra oil, sterilized by heat without the addition of any other drugs, daily, except Sunday, for three weeks at a time, this is followed by a rest for two weeks. Iritis, laryngitis and acute tuberculosis are indications for caution.

Lancet, London

Jan 20 1923 1, No 5186

Achlorhydria Its Relation to Pernicious Anemia and Other Diseases A F Hurst—p 111

Deep Roentgen Ray Therapy W Pilger—p 115

Results of Deep Roentgen Ray Therapy R Morton and H B Lee—p 117

Ataxistic Degenerative Diathesis of Tuberculosis W C River—p 120

*Wassermann and Flocculation Tests Compared A L Urquhart—p 125

*Syphilis Transmitted to Third Generation C F T East—p 123
Technic of Spinal Analgesia for Laparotomy S A Lane—p 129

Relation of Achlorhydria to Pernicious Anemia—From observations of cases, Hurst says it is obvious that anemia does not cause achlorhydria. The achlorhydria is present when the anemia is not. The achlorhydria is not of specific type, but, whatever its origin, it predisposes to the development of pernicious anemia. The history in most cases points to the achlorhydria being of primary or constitutional form. This is undoubtedly the inherited factor in the cases of familial pernicious anemia which have been recorded with increasing frequency in the last few years. In one of Hurst's cases the achlorhydria was due to alcoholic gastritis, in another it resulted from gastro-enterostomy for ulcer, and—conclusive proof that the achlorhydria is primary and not secondary—in at least five cases, pernicious anemia followed artificial achylia produced by total gastrectomy for cancer.

Atavistic Degenerative Diathesis of Tuberculosis—Rivers believes that the so-called stigmata of tuberculous predisposition are nothing but signs of an already present infection. In Rivers' opinion, atavistic reversion to a primitive susceptibility to tuberculosis (seen in uncivilized races) needs mention, while race mixture can hardly be held universally responsible for tuberculous predisposition. Of 175 juvenile consumptives, twenty-two showed either squint, ichthyosis, red hair or persistent lanugo. In these twenty-two there was one miscegenate (mixed race) to every seven, but in the remainder only one miscegenate to every seventeen.

Wassermann and Flocculation Tests Compared—Urquhart contends that the flocculation test gives as reliable results as the Wassermann reaction, and that the flocculation test is preferable on account of its greater simplicity.

Transmission of Syphilis to Third Generation—The case described by East is said strongly to support evidence that congenital syphilis can be transmitted to the second generation. A young woman aged 23 had syphilitic iritis. The Wassermann reaction in her blood was strongly positive. The father showed no trace of syphilitic lesion, nor was there anything in his history to suggest that he had ever had syphilis. His Wassermann reaction was negative. The patient's mother said that she had never had a miscarriage. The cornea of her left eye had unmistakable scars of an old interstitial keratitis. She had an external strabismus in this eye. In other respects her eyes were normal. Her teeth were typically hutchinsonian. The arch of the palate was high. The Wassermann reaction was strongly positive. She was an only child, her father had been a soldier on foreign

In one case the diastase tests failed to reveal very extensive renal damage. The patient died from uremia twenty-four hours after prostatectomy. His diastase in both blood and urine was normal, but the urea concentration test gave 1.55 per cent. While estimations of diastase in both blood and urine are of value in confirmation of other renal efficiency tests, the authors would not rely on an estimation confined to the urine.

Glucose Tolerance in Arthritis—In general, the findings of Pemberton have been corroborated by Pringle and Miller. A lowered glucose tolerance was found in a large proportion of cases of arthritis and muscular fibrositis. This lowered tolerance was specially marked in the great majority of the severe infective cases as well as in the cases of periarticular and muscular fibrositis. The degree of intolerance was roughly proportional to the activity of the arthritic process. The glucose toleration reaction tended to return to normal with convalescence and recovery. The return to normal was usually most rapid when the infective foci were removed. The estimation of glucose tolerance in conjunction with the other clinical signs and symptoms was found to be of assistance in the classification as well as in the prognosis of cases of arthritis. It is stated that in cases with markedly low glucose tolerance, and in which the focus of infection cannot be found nor removed, the prognosis is bad.

Survival of a Premature Infant Under Artificial Feeding—The case reported by O'Farrell is of interest because the infant weighed 35½ ounces at birth and was born during a malarial paroxysm, and also because she progressed under artificial feeding.

South African Medical Record, Capetown

Dec 21 1927, No. 24

Incidence of Undulant Fever in South Africa Is It a Menace to Urban Communities? A Gow—p 45

Pneumoperitoneum. C F Rivers—p 479

How to Apply Medicines to Skin C Jupp—p 483

Case of Chronic Stenosis of Common Bile Duct Treated by Operation C Lundie—p 487

Nongreasy Base for Ointments—The preparation used Piper as a basis for ointments is the "bassorin or cream-exsiccans" of the English Pharmaceutical Code, the "mentum exsiccans" of some continental codes. It is prepared from tragacanth 4 parts, glycerin 2 parts, water, 94 parts. It is never used pure, and is a base for the incorporation of medicaments (2 to 5 per cent), phenol (up to 1 per cent), salicylic acid (up to 5 per cent), chloroform (up to 5 per cent), and zinc oxide (5 per cent).

perineum the levator ani muscles must be brought together and the whole muscular floor must be strengthened by methodical movements which he calls "perineal gymnastics" To bring the levator ani together, a strong catgut thread is passed around the two segments and tied The suture of the other perineal tissues is of secondary importance The "perineal gymnastics" consist of contraction of the sphincter of the anus On account of the connection between this muscle and the internal segment of the levator ani, the sphincter contracts at the same time as the levator This is easily confirmed by palpation through the vagina This exercise is practiced after every delivery especially when the perineum is soft but not torn The movements are made daily about twenty times during the first fifteen days This strengthens the muscular floor of the perineum and pelvis

Bulletin Medical, Paris

Dec 23 1922 36, No 52

- *Morbid Syndrome Due to Nervous Shock Before Sleep A Hanns—p 1051
- Nephritis Due to Bismuth C Simon—p 1052

Nervous Spasms on Retiring—The man of 36 suffered from spasmodic attacks of nervous jerking as soon as he lay down to sleep Hanns studied the case for six months, but was unable to explain the spasms until a second similar case in a somewhat older man allowed him to conclude that the syndrome was due to slight disturbance in the spinal cord or brain, from fatigue, general debility or slight uremic intoxication Under sedatives, rest and strict hygiene, the spasms disappeared completely The reclining position seemed to be an essential factor in these *secousses nerveuses presomniques*, as he calls them

Neoplasmes, Paris

November December, 1922 1, No 6

- *Refractometric Tests with Cancer A Knipfer—p 177
 - Experimental Epithelial Tumors in Mice U Parodi—p 188
- Refractometric Tests of Serum of Patients with Cancer**—Knipfer made parallel tests with Freund-Kaminer's and Abderhalden's methods Deep treatment with roentgen rays increased the cytolytic power of cancer serum, while healthy serum sometimes lost this power Abderhalden ferments also increased after this treatment in cancer, while they were never present in health He hopes that this reaction to roentgen rays will improve the serologic diagnosis of cancer

Presse Médicale, Paris

Dec 20 1922 30, No 101

- *Meningitis with Lymphocytosis E Apert and R Broca—p 1093
- Sulphur in External Dermatotherapy R Sabouraud—p 1094
- *Action of Chlorids on Gastric Secretion A Frouin—p 1096

Curable Meningitis with Lymphocytosis—Apert and Broca publish two cases of meningitis with marked lymphocytosis in the cerebrospinal fluid, and no polymorphonuclears One case was due to *Spirochaeta uterohemorrhagiae*, the other gave negative reactions Both children recovered completely They point out that the lymphocytosis was too absolute for tuberculosis

Sulphur in External Dermatotherapy—Sabouraud reviews the uses of preparations of sulphur and concludes that they are excellent in all affections of the follicles or localized around the hair follicles

Action of Chlorids on Gastric Secretion—Frouin found in experiments on dogs that a salt-free diet inhibits within a short time (about eight days) completely the gastric secretion Ingestion of salt increases the secretion, as also salt given intravenously Yet the direct application of salt to the mucosa of the stomach gives better results Chlorids of calcium and magnesium have the same action as sodium chlorid on the stomach secretion

Dec. 23 1922 30 No 102

- Periarterial Sympathectomy R Leriche—p 1105
- Topography of Nerves of the Brachial Plexus E Olivier—p 1108
- External Secretion of Pancreas in Asystolia Garofeano—p 1109
- Firmation of Albumin in Chronic Nephritis A Hann—p 1110
- Epileptic Attacks Due to Cerebral Inhibitions P Hartenberg—p 1111
- Drug Antigenic to Quinidin L Chemi—p 1113

Periarterial Sympathectomy—Leriche gives the bibliography and technic of his operation Experiments on animals cannot refute his findings since it seems that the typical changes (contraction of the artery by irritation and a subsequent vasodilation) occur only in man The periarterial (or arterial) sympathectomy is different from Jaboulay's denudation of arteries with tearing of the nerves Jaboulay would certainly have noticed the contraction of the artery during the operation if it had occurred with his method, as it does with Leriche's He publishes a case of severe arteriosclerosis in which the carotid tore during the operation Caution is therefore necessary in senile gangrene, and injections of alcohol into the arterial sheath might sometimes be preferable to block the nerve fibers The operation causes a better peripheral circulation with elevation of arterial pressure and local temperature It is indicated with impaired peripheral nutrition not of central nervous, vascular or blood origin The beginning stages of chronic arthritis of peripheral joints might be improved by it, and, indirectly, the functioning of the endocrine glands might be favorably influenced [A recent article on Leriche's periarterial sympathectomy was published in THE JOURNAL, page 173]

Functional Value of External Secretion of Pancreas in Asystolia—Garofeano studied the pancreatic secretion of trypsin and amylase in cases of decompensated heart Both ferments were present in larger amounts than normal, especially when the gastric secretion was impaired

Epileptic Attacks Due to Cerebral Inhibition—Hartenberg attributes severe epileptic attacks to an inhibition of cortical centers, and not to excitation He considers minor attacks and epileptic equivalents from the same point of view

Schweizerische medizinische Wochenschrift, Basel

Dec 21 1922 52, No 48

- *Exfoliative Dermatitis E Wieland—p 1165
- Benign Albuminuria in Children P Lauener—p 1170
- Volume of Blood in Pregnant Women E Guéissaz and F Wanner—p 1173 Cont d
- *Injury of the Retina by the Sun J Strebel—p 1177
- Therapeutic Increase of the Blood Coagulability P F Nigst—p 1178 Cont n
- Folklore on Erysipelas A Martin—p 1183

Exfoliative Dermatitis—Wieland observed an epidemic of twelve cases of pemphigus neonatorum at the same time as twenty-one cases of pemphigus in the maternity hospital The cases in the adults were light and the epidemic stopped after sterilization of the clothes The infants presented all forms from an abortive pemphigus to the most severe and fatal type In seven infants *Staphylococcus aureus* was cultivated from the blisters and from the blood in two cases

Injury of the Retina by the Sun in Spite of Protective Glasses—Strebel's patient observed the eclipse of the sun through deep blue glasses, and did not recover from the injury to the macula lutea Blue glasses do not protect and should not be used

Polichinico, Rome

Dec 18 1922 29, No 51

- *Substances with Incomplete Vitamin Action M Pantaleoni—p 1653
- Painful Cavernoma in the Lumbar Muscles L Cevario—p 1654
- *Activation of Malaria Parasites I di Pace—p 1658
- *Breeding of Oysters and Hygiene M Gioseffi—p 1660

Substances with Incomplete Vitamin Action—Pantaleoni investigated the action of different substances in polyneuritic pigeons and animals He confirmed the partially curative action of ammonia but not of its salts

Activation of Malaria Parasites by Different Methods—Di Pace compared the effects of different substances on the activation of latent malaria Injections of strychnin nitrate were best Epinephrin pituitary extract, milk, and cold baths were a little less effective

Hygiene in the Breeding of Oysters—Gioseffi discusses the difficulties of hygienic supervision of oyster breeding Local interests interfere with the requirements He quotes an example in which the sanitary authorities had to admit for sale oysters from a port which served as a cesspool for 30 000 inhabitants He recommends special laws

Transactions of Surgical Congress—pp. 311
Surgical General Infection. F. Loxton—p. 316
Experimental Basis for Definition of Wounds. Wolfe—
To Insure Antisepsis in the D. F. Martin—p. 317
To Insure Asepsis. W. Neely—p. 342
Examination of Blood in Surgical Infection. O. Stille—
Analysis and Regeneration of Tissues. Stille—
Influence of Operations on Organism. Stille—
Technic for Thyrotoxicity. F. Stille—
Valvular Control of the Heart. W. Stille—
O. Active Treatment of Pulmonary T.

- Trephining the Sella Turcica F Oehlecker—p 490
 *Puncture of Corpus Callosum H Kastner—p 512
 *Localized Fibrous Osteitis G E Konjetzny—p 567
 *Technic for Suture of Bone M Kirschner—p 635
 Surgery of Carotid Gland H Klose—p 689
 Radium Treatment of Cancer of Esophagus Kurtzahn—p 725
 Anatomy of Membranous Pericollitis E Seifert—p 754
 *Absorbable Tampons H Kummell—p 764
 Pain in the Viscera G v Bergmann—p 774
 Resolvent for Scar Structures E Payr—p 780

Transactions of Surgical Congress—This bulky volume of 830 pages contains the proceedings of the forty-sixth annual meeting of the Deutsche Gesellschaft für Chirurgie. It also contains twenty articles which are elaborations of short communications presented at the congress.

Surgical General Infection—Lexer rejects the term sepsis, and insists on the necessity for discriminating between bacterial general infection and toxic general infection, and between the pyogenic, putrid and specific forms of bacterial general infection. Toxic general infection is of animal, bacterial, or tissue toxin origin. Various questions are suggested by this classification of surgical general infection. Do the toxic tissue elements act alone or with bacterial toxins to influence the course of the disturbances? Do the tissue toxins act by promoting the virulence of the bacteria, or by reducing the defensive forces? To what extent do they influence immunity reactions? He cites data already available which throw a little light on these questions. The main thing now is to separate the tissue toxins from the products of bacteria. This may reveal new bases for therapeutics.

The Differential Blood Count in Surgical Affections—Stahl emphasizes that it is not the presence of pus that modifies the cell content of the blood, but the consequences of the presence of pus. He insists on the necessity for serial blood counts. The general trend is more instructive than single findings. Change in the blood count precedes the clinical aggravation or improvement, as he shows by nine typical cases.

Influence of Surgical Affections on the Blood—Lohr presents evidence which confirms the profound changes in the blood serum under the influence of operations, fractures and infectious diseases. The destruction of tissue induces changes of a chemico-physical nature although the albumin content may not be modified. The speed of sedimentation of the red corpuscles is a sensitive and reliable index of them. The extent of the modification of the sedimentation indicates the extent of tissue destruction. With this extraordinarily simple and easy test we can distinguish between inflammatory and noninflammatory bone lesions, etc. The changes it reveals occur earlier and last longer than changes in the differential leukocyte count. The sedimentation test is most instructive when it is negative.

Technic for Thyroidectomy—Streissler slits the isthmus of the thyroid on the median line and removes the necessary portions of the thyroid without molesting the capsule. By this means there is no danger of removing the parathyroid bodies while the nourishment is insured of the portions of the thyroid that remain.

Valve Breathing—Pfanner states that the results of experimental research, clinical experience and necropsy findings show the identity of the process in all conditions in which some valvular mechanical obstacle impedes respiration. He analyzes the various clinical pictures involved, from goiter and foreign bodies to asthma.

Operative Treatment of Pulmonary Tuberculosis—Brunner remarks that surgical treatment of pulmonary tuberculosis is gaining ground. In 381 cases of thoracoplasty 35 per cent were apparently cured by the operation. In 116 recent cases at Munich, 66 per cent were apparently cured. The mortality was 27 per cent in the nineteen cases in which the operation was completed at a single sitting. It was only 4 per cent in the forty-seven with more than one sitting. In Sauerbruch's series thoracoplasty operations in fifteen years total 500.

Puncture of the Corpus Callosum—Kastner relates that Payr has applied this measure in twenty-four cases of congenital and seven cases of acquired hydrocephalus. Persistent improvement followed in the majority. It was applied in cases of brain tumor, epilepsy, trauma of the head, etc., to a

total of 102 cases. He extols the method as a routine practice for hydrocephalus, and also for decompression in brain tumors when the tumor cannot be localized. It is absolutely contraindicated with cerebellar tumors, and with tumors near the third or fourth ventricles and aqueduct of Sylvius. With epilepsy, tentative puncture of the corpus callosum is justified after failure of other measures.

Localized Fibrous Osteitis—Konjetzny discusses the origin and nature of solitary cysts in bones and involutionary giant-cell sarcoma.

Suture of Bones—Kirschner gives an illustrated description of various devices for suturing bone stumps together and reconstructing the shaft. Twenty-two cases are summarized.

Absorbable Tampons—Kummell's absorbable tampons have been described in these columns. He states that they are proving very useful. In his twenty cases, the catgut pad healed in place without reaction on the part of the tissues.

Deutsche medizinische Wochenschrift, Berlin

Dec 15, 1922 48 No 50

- *Changes of Reactivity During Treatment H Koniger—p 1669
 *Sensitiveness of Skin to Poisons K Zieler and H J Markert—p 1672
 *Pathogenesis of Fever R Greving—p 1673
 Heart Insufficiency and Digitalis R Ehrmann and L Dinklin—p 1675
 Action of Cinchophen E Starkenstein—p 1677
 Blood Sugar Determination R Offenbacher—p 1677
 Typhus Fever D D Pletnew—p 1678
 Acetic Ether in Pediculosis Bieber—p 1678
 Bacterioscopic Diagnosis of Rectal Gonorrhea A Calmann—p 1678
 Ring Forceps Pfeleiderer—p 1678
 Modification of the Record Syringe H Feriz—p 1679
 Abnormal Labor Pains M Henkel—p 1679
 Foreign Bodies in Nose Finder—p 1681
 Committee Report on Reform in Medical Examinations J Schwalbe—p 1684 Cont'd
 Beginnings of Bacteriologic Researches C Flugge—p 1685

Changes of Reactivity During Treatment—Koniger found that the reactivity of a patient changes after antipyretics, narcotics, mechanotherapy, hydrotherapy and parenteral injections of specific and nonspecific proteins, in a regular way. After a short lowering of resistance comes a stage of increased resistance, which may last for one or two days. This phenomenon has nothing to do with specific immunity, since it occurs also in healthy subjects and vanishes comparatively soon. It is possible by keeping up in this way the nonspecific resistance to overcome the specific allergy of the patient. The action of antipyretics is not merely symptomatic, it leads indirectly to a specific immunity because of the short periods of lowered resistance when the infection flares up. He attributes such an action also to quinin in malaria, mercury in syphilis, and salicylic acid in rheumatism. Parenteral injections of proteins are superfluous since the same action may be obtained with milder means, especially with physical treatment. The most important point is in the necessary intervals, and the optimal duration of these intervals depends on the individual changes in the reactivity, the *reizbarkeitsänderung* of the subject. Very small doses of iodine (1 mg), are sufficient in goiters if the intervals are not less than from three to eight days.

Sensitiveness of Skin to Poisons in Tuberculosis—Zieler and Markert found that persons without tuberculosis react to intracutaneous injections of the diphtheria and dysentery toxins and of peptone in the same way as tuberculous patients. Such reactions never flare up in these patients after a subcutaneous injection of tuberculin.

Pathogenesis of Fever—Greving reviews the modern investigations on the subject especially those dealing with the relation of the central nervous system to the regulation of temperature. The production of heat is localized chiefly in the abdominal organs and not in the muscles.

Medizinische Klinik, Berlin

Dec 10, 1922 18 No 50

- *Psychic Infantilism F Jamin—p 1575
 *Treatment of Permanently High Blood Pressure Groher—p 1576
 *Typhus Fever M H Kuczyński—p 1579
 *Determination of Borders of Lung and Exudates by Inspection F Weisz—p 1582

- *Anaphylaxis and Heart Failure in Diphtheria G Scholz—p 1583
Intravenous Use of Digitalis S Hirsch and M Kaiser—p 1586
Operative Treatment of Abortion Liepmann—p 1586 Id Pentz—p 1587
Roentgen Ray Diagnosis of Duodenal Ulcers G Herrnheiser—p 1587
Intravenous Injection of Concentrated Arsphenamin J R Thim—p 1589 Conc n No 51 p 1623
Dermatomycoses F Pinkus—p 1593
Traumatic Deformities S Peltesohn—p 1594

Psychic Infantilism—Jamin emphasizes the importance of exogenous factors (nutrition, infectious diseases) in the prepubertal period, as causes of inhibition of psychic evolution. The treatment is expectant, and a cautious but methodical training in adaptation to social requirements is better than rest cures.

Treatment of Permanent Hypertension by Physical Means—Grober begins with regulation of diet. For psychologic reasons it is better to prohibit coffee and nicotine entirely. High altitudes have a beneficial effect, as well as the subtropic and tropic climate. Mild hydrotherapy is good, especially shower baths at from 30 to 32 C. on chest and back (not on the head). The use of carbon dioxide baths is still doubtful. Oxygen baths may increase the pressure in neuropaths. Careful mechanotherapy and breathing gymnastics are beneficial. Periodical venesections are sometimes necessary. Some cases react very well at least temporarily, to irradiation with blue or ultraviolet rays. General diathermy seems to give more permanent results.

Typhus Fever—Kuczynski reports continued cultivations of a virus from guinea-pigs infected with typhus fever. He claims that this virus is identical with *Rickettsia prowazekii* and belongs to the proteus group. The Weil-Felix bacillus *Proteus X*, is not the cause of typhus fever, but is very near this virus. Immunologic experiments performed by him and Eichholz on animals gave very good results, both prophylactic (vaccines) and therapeutic (serum).

Determination of Borders of Lung and Exudates by Inspection—Weisz describes two interesting methods for determination of the lung area. The first consists in observation of a slight bulging of the intercostal spaces at the beginning of phonation. The patient repeats (with pauses between) the German word "kitt". Bulging is also distinct over an exudate (except in an open pneumothorax), and thus reveals the upper border of the liver in such cases. The second phenomenon was described by him twenty years ago. It consists in the formation of little pits, *grubchen*, during a quick and not too deep inspiration. The beginner should examine only narrow strips of the intercostal spaces (1 to 4 cm), covering the rest with the hands. He explains the mechanical principles involved.

Anaphylaxis and Heart Failure in Diphtheria—Scholz's patient aged 31, who had been injected eight and a half years previously with diphtheria antitoxin, was treated for diphtheria with an intramuscular injection of 3000 units of serum. Twelve days later urticaria set in and three hours later complete collapse. No heart sounds were present. Camphorated ether revived the patient. Three hours later a new attack of urticaria was followed by weak pulse and disturbances of the sensorium. Inhalation of ether restored the patient again. Several similar attacks were stopped by inhalations of ether and the patient finally recovered. Scholz points out the resemblance of this anaphylactic condition to the sudden death in diphtheria, and recommends the use of ether.

Zeitschrift für urologische Chirurgie Berlin

Nov 4 1922 11 No 3-4

- Reflex Anuria K Neuwirt—p 75
Urogenital Disease and Tonsillectomy R Picker—p 86
Hydronephrosis I Blatt—p 93
*Nature of Hypertrophy of the Prostate J v Borza—p 109
Tuberculosis of Genital Organs R Bachrach—p 114
Hydronephrosis from Phimosis L Raphaelson—p 122
Vascular Complications with Hypernephroma W Israel—p 131
Reply E Rehn—p 136

Treatment of Reflex Anuria—Neuwirt says that the kidneys are more richly provided with nerves than almost any other organ. The splanchnics are the vasomotor nerves of the kidneys, blocking the splanchnic nerve not only arrests

kidney colic but also checks reflex inhibitions. It thus puts an end to reflex anuria and oliguria. Blocking the splanchnic nerve by Kappis' technic has the same effect as severing the nerve in animals. Neuwirt applied the Kappis method in a case of recurring kidney colic and reflex oliguria probably induced by calculi, in a man aged 54. The results sustained his theoretical assumption, the colic subsided and the urine output increased to an average of 1800 cc. He blocked the splanchnic nerve on both sides in this case, possibly one side alone would have sufficed.

Cure of Staphylococcus Infection of Urinary Apparatus—In the case described the man aged 30 had staphylococci regularly in the urine. They were evidently eliminated through the parenchyma of both kidneys. Local treatment had been applied thirty-eight times to the kidneys without avail. Picker then removed both tonsils and in two days the urine was clear and sterile.

Hydronephrosis—Blatt states that hematuria was the only clinical symptom in one of the twenty cases he has been studying. Anomalies in development were evident in the majority of the cases. His experience warns that cystic dilatation of the lower end of the ureter should be promptly corrected or otherwise hydronephrosis may follow. It was intermittent in one of his three cases in this group. A connection with affections of the female genital organs was frequently manifest. With dysmenorrhea the possibility of hydronephrosis should always be considered. The latter has sometimes been mistaken for appendicitis, gallbladder disease and even gastric ulcer.

Nature of Hypertrophy of the Prostate—Borza concludes from his research that so called hypertrophy of the prostate is not hypertrophy but a tumor, an adenoma of the accessory periurethral glands.

Tuberculosis of Genital Organs—Bachrach analyzes 70 cases of tuberculous epididymitis in which the epididymus was removed since 1902. In 20 per cent the kidney was also tuberculous. Reexamination of 25 more than three years later showed 15 apparently cured. Two patients have died of old age without return of the tuberculosis. One man died from tuberculous peritonitis after nine years of good health subsequent to unilateral castration and nephrectomy. Two others died from generalized tuberculosis twelve and eighteen months later. Of the 70 patients 36 were between 20 and 40 and 15 between 50 and 60 when the genital disease developed. There was a history of gonorrhea in 16. Voelcker's technic has made removal of the seminal vesicles practicable and this has materially improved the prognosis with genital tuberculosis. In conclusion Bachrach reports the case of a man of 35 who had had a series of operations on the genital organs for tuberculosis. The symptoms indicating endocrine insufficiency subsided after a testicle graft and removal of the left seminal vesicle.

Zentralblatt für Chirurgie, Leipzig

Dec 23 1922 49, No 51

- *Spastic Ileus and Lumbar Anesthesia A Mayer—p 1892
Early Detection of Cancer Recurrence F Franke—p 189
Diagnosis of Loss of Femoral Nerve Function Schmidt—p 1826
Operation for Fistula of Gallbladder A Hildebrandt—p 1887
Mixed Tumor of Parotid Gland with Bone Metastasis M Balle—p 1888
*Deutschlander's Tumors of the Metastases H Menckel—p 188
Comment on Prostatectomy Medina C Seugeler—p 177
Modification of Deschamps' Needle for Ligature of Blood Vessels L v Czirer—p 1894
Operative Method for Perforated Gastroduodenal Ulcer H Zoller—p 1895

Spastic Ileus Subsides Under Intraspinal Anesthesia—Mayer points out what seems to him a close connection between spastic ileus and lumbar anesthesia. In two cases several days after a gynecologic laparotomy ileus-like symptoms appeared suddenly with meteorism, vomiting, and painful stiffening of the intestine. Various means to restore intestinal function proved unavailing. Mayer decided to reopen the abdomen under renewed lumbar anesthesia. Immediately after the intraspinal injection of the procaine epinephrine mixture the patient passed flatus and a copious stool. The operation was not performed and the patient promptly recovered.

without further complications. He is convinced that intestinal spasm was present and, furthermore, that it was dispelled by the lumbar anesthesia. Whether the anesthesia dispelled the intestinal spasm directly, or merely stimulated peristalsis, did not appear clearly. Mayer emphasizes that this treatment would of course be valueless in ileus of mechanical origin—it might even be dangerous.

Method of Recognizing Beginnings of Cancer Recurrence—Frankel recommends his method for the early recognition of beginnings of cancer recurrence in the region of a tumor operated on. It consists in rubbing the finger several times in succession across the suspected region, but not pressing so hard as to cause pain. Though previously neither the eye nor the palpating finger has discovered anything abnormal, this will often reveal small nodules in the skin. They appear as small whitish, papular elevations which turn red spontaneously or as the skin is stroked, sometimes they are of a deeper red, resembling urticarial spots. The redness continues for from five to ten minutes—sometimes even longer. Frankel thinks this phenomenon is due to the fact that the cancer cells secrete a poison that has an irritating effect on the surrounding tissues—especially the blood vessels and the nerves. This irritation may be of the same nature as that noted at the border of a cancer and the healthy tissue, which manifests itself in the form of inflammatory changes in the connective tissue. Frankel recommends that patients who have been operated on for cancer be requested to present themselves at definite short intervals, in order that they may be examined for this irritation phenomenon.

Metatarsophalangeal Arthritis Deformans—Blenccke reports some cases of an inflammatory process in the metatarsophalangeal joints, especially of the great toe, which he has observed recently in about twenty young girls. The inflammation was associated with deforming changes in the bone. He ascribes the condition to the wearing of low shoes with high heels. The almost perpendicular slope of the metatarsal bones resulting from high heels throws an abnormal weight on the heads of the metatarsal bones and on the first phalanx of the great toe, as he illustrates by a roentgenogram of a foot in a high-heeled shoe. Arthritis deformans of the first phalanx of the great toe may be due to such overweighting. A second roentgenogram illustrates one of the typical cases of chronic inflammatory inflammation in a girl, aged 18. He discusses in connection with it Deutschländer's tumors of the metatarsus.

Casopsis Lekaruv Ceskych, Prague

Dec 16 1922 61, No 50

Treatment of Parkinsonian Syndromes with Large Doses of Sodium Cacodylate K. Henner—p 1196 Contn
Treatment of Abortion E. Ham and M. Zahradnik—p 1200
Pain of the Spinal Dura Mater Niederle—p 1203

Acta Medica Scandinavica, Stockholm

Nov 29 1922 57, No 23

Chlorin in Blood and Tissues P. Iversen and H. Hansborg—p 95
Cancer in Ulcer and Ulcerated Cancer Simulating Round Ulcer L. Dahl Iversen—p 134

*Red Corpuscles and Their Variations E. J. Rud—p 142 Contn No 4

*Slight Glycosurias J. E. Holst—p 188

*Polycythemia Rubra H. Curschmann—p 228

*Undernutrition and Endocrine Disturbances H. Curschmann—p 240

*Syngeneic Simulating a Spinal Tumor T. Stenholm—p 247

*Seasonal Variation of Weight of the Tuberculous Strandgaard—p 275

Distribution of Chlorin in Blood and Tissues After Injection of Sodium Chlorid—Iversen and Hansborg studied in rabbits the distribution of intravenous infusions of 10 per cent salt solution. They found that the sodium chlorid is deposited in the tissues so rapidly that one circulation may be sufficient to reestablish the equilibrium of chlorin between the blood and tissues. About 8 per cent of the injected amount remains in the blood, even after seventy minutes. In thyroidectomized animals more salt is retained in the tissues after the infusion. In normal animals more salt is found in the blood after the injection than would correspond to its water content. In thyroidectomized animals the opposite is true. There were indications that the kidneys influence salt retention in the tissues. Ligature of one or both kidneys after the injection is followed by increased flow from the

tissues into the blood just as after injections of epinephrin or pituitary extract.

Red Corpuscles and Their Variations—Rud surveys the literature and gives his findings in 69 adults and 49 children. Average errors were about 2 per cent. He found in male adults an average of 5,330,000 erythrocytes (maximum 5,900,000, minimum 4,370,000). In adult women the average was 4,830,000 (maximum 5,390,000, minimum 4,300,000). Old persons have slightly lower figures than the young. The newborn averaged 5,680,000 (maximum 6,590,000 and minimum 4,470,000), nurslings 5,110,000, children between 1 and 14 years, 4,360,000, without influence by sex.

Slight Glycosuria—Holst describes seventeen cases of moderate glycosuria. Some are of the diabetic, some of the renal type, and seven cases are considered as being on the border line between them. The two latter groups are benign.

Polycythemia Rubra—Curschmann describes two cases of a familial polycythemia rubra. The spleen was distinctly enlarged in the first case. The cases began in early childhood, and remained almost stationary. While pointing to an unquestionable constitutional factor, he does not admit the assumption of endocrine disturbances in the pathogenesis of the disease.

Undernutrition and Endocrine Disturbances—Curschmann admits thyroid changes in edema from undernutrition, but emphasizes also the differences (especially in the concentration of serum) from hypothyroidism. Undernutrition seems to cause increased gastric hyperacidity in people who are inclined to it, while it may cause achylia in others. Diabetes as well as exophthalmic goiter occurred less frequently during the war. Therapeutic possibilities of undernutrition in exophthalmic goiter are discussed, although not yet recommended.

Seasonal Variation in Weight of Tuberculous Patients—Strandgaard studied the variations in the average weekly gain of patients in five Danish sanatoriums. He found a remarkable coincidence of these changes in different sanatoriums, distinct when weeks were compared, and striking in the comparison of months. Atmospheric influences seem to be the cause. The maximum gain was in September. This was followed by a rapid decline in October and November.

Hospitalstidende, Copenhagen

Jan 3 1923 66, No 1

*Antethoracic Esophagoplasty Thorkild Rosing—p 1

Antethoracic Esophagus—Rosing has decided that there is no necessity for making the new esophagus from a segment of bowel or the stomach. These unnecessarily complicate the procedure, as a new esophagus answering every purpose can be made out of two long skin flaps turned back over a long large drainage tube. The flaps are sutured together with catgut on the median line, from neck to stomach. The skin beyond is loosened and drawn up to suture together over the whole. In the woman illustrated, Rosing waited six weeks for the parts to heal before he united the upper stump of the esophagus to the new skin tube. Five different operations between Feb 17 and Aug 6 1921, were required, then the patient was discharged in excellent condition. She eats with good appetite, has gained 26 pounds, and can be considered completely cured. Rosing has applied the first two or three steps of the procedure in two other cases still under treatment. He severs the esophagus and brings the peripheral stump out through a minute incision beyond the sternocleidomastoid muscle. This does away with the pocket above the atresia in which food and secretions stagnate. Rosing regards this as an essential improvement over other methods, all of which bury this stump.

Hygiea, Stockholm

Dec 31 1922 84, No 24

*Obsessions and Their Treatment P. Bjerre—p 1009

Obsessions and Their Treatment—Bjerre describes typical instances of inhibiting or impelling complexes, and discusses treatment. He says that psychoanalysis in these cases has to be conducted, like a mathematical problem, until the correct equation is found.

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EPIDEMIOLOGIC SURVEY IN A CITIZEN'S MILITARY TRAINING CAMP

DIPHTHERIA CARRIERS AND SUSCEPTIBILITY,
CARRIERS OF INTESTINAL DISEASES*

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In the study and the control of communicable diseases, a problem of the greatest importance is presented by the carriers of infection, and especially those carriers not known to have come in contact with the sick. Surveys made in nonepidemic periods show that a surprisingly high percentage of the inhabitants of any community harbor in their bodies bacteria of disease-producing types. These persons are true reservoirs of infection, and constitute for infectious disease its main bulwark of defense. At present we have only meager and suggestive evidence concerning the proportion of noncontact carriers in the general population, and many questions, especially those connected with their relative duration and infectivity, remain unanswered. Nearly all of the surveys of which we have record have been made for specific purposes, usually during or subsequent to epidemic conditions. There is a good reason for this, since we possess no legal means by which we may enter any community and study the carrier rate among the healthy civilian population. The difficulties to be overcome before undertaking such a task, and indeed throughout its continuance, are generally sufficient to discourage those willing to perform the necessary work.

It would seem, therefore, that whenever a practical opportunity is offered to make a systematic epidemiologic study on even a fraction of the normal population, the carrying out of such a study becomes a duty that no conscientious epidemiologist would attempt to shirk.

According to the present policy of the government, young men from every community are given the privilege of a month's military training each summer at army camps located in the various corps areas. The young men attending these camps represent a great variety of home surroundings. It might at first be assumed that they would constitute a representative sample of the whole population at their age group but this is not unqualifiedly the case. Intimate contact with them soon reveals the fact that they belong to the strong and healthy type of young man—both in body

and in mind—and the findings among them would represent something near the optimum conditions in their communities.

It is obvious, therefore, that the Citizens' Military Training Camps afford an opportunity to elicit facts of the greatest epidemiologic value, and without causing the individuals studied the slightest inconvenience. The scope and thoroughness of the investigations will depend chiefly on the training and number of the personnel available for carrying out the work. It is confidently believed that as the potential value to the army and to the country of this unique opportunity to study preventable disease is realized, ample facilities will be forthcoming. Scarcely secondary in importance is the opportunity to train reserve officers in the technique of extensive surveys, such as our laboratories were called on to make in the winters of 1917, 1918 and 1919.

Recognizing the valuable field thus offered, a beginning in such studies was made at Camp Meade this year. Plans were carefully laid beforehand so that the laboratory of the Third Corps Area, with the cooperation of several technicians from the Army Medical School, was ready to fit in the work projected without interference with the strictly military phases of the training period. The investigation included a search for virulent diphtheria bacilli in the throats of candidates presenting themselves for training, the application of the skin test for diphtheria susceptibility, and a study of the feces for ova of intestinal parasites and for members of the typhoid-paratyphoid-dysentery group of bacilli.

DIPHTHERIA BACILLUS CARRIERS

During the "processing" of applicants presenting themselves for admission to the camp, throat cultures were made from all candidates, both those accepted and those rejected being included. By "processing" is meant the series of physical examinations to which every man was subjected in order to record, so far as possible his exact physical condition. The selection of this particular time for taking the culture was the most favorable for the purpose since the individuals concerned had been on the reservation less than an hour and it was scarcely possible that any of them had picked up diphtheria bacilli from other students.

In taking the cultures, the usual technique followed. Sterile cotton swabs were applied to the tonsillar region on both sides and swept over the pharynx, the swabs were immediately rubbed over the surface of Loeffler's blood serum mixture in tubes, these cultures were transferred to the laboratory, where they were incubated and examined microscopically the next day, after being stained with Loeffler's alkaline blue. In making the examination the operator considered each single individual as consisting of

*From the Laboratory of the Third Corps Area Camp Meade Md. and the Laboratories of the Army Medical School Washington D C.

thought to be positive was examined by two or three persons, and every culture containing bacilli even remotely resembling the diphtheria bacillus was retained for further examination. Naturally, an unusually large number of the cultures were retained by such selection, but in a survey such as this, there would have been too much chance of missing virulent diphtheria bacilli had we accepted as possibly virulent only forms identical in morphology with Wesbrook's A, C and D types.

Cultures were made from the throats of 1,080 persons. In eighty-three of these, forms were found which caused us to retain them. On reexamination, seventeen of these were dropped, thus reducing the number for further study to sixty-six. The subsequent study consisted merely of making subcultures on plates containing Loeffler's blood serum mixture and on blood agar, and attempting to isolate, from these, organisms of diphtheria bacillus morphology. All diphtheria bacillus-like organisms were tested for virulence by the injection of a saline suspension of one-half the twenty-four hour growth on coagulated blood serum mixture subcutaneously into two guinea-pigs. One of these guinea-pigs received approximately 500 units of diphtheria antitoxin intraperitoneally. On the death of an animal, careful necropsy was performed and characteristic subcutaneous edema with hemorrhagic suprarenals noted in every positive case. The sixty-six cultures noted above were injected in this way. The toxicity of each virulent culture was confirmed by at least two subsequent tests.

Of the sixty-six cultures tested for pathogenicity, nine were found to be virulent diphtheria bacilli. This means a carrier rate at this camp of 0.83 per cent. One other culture, not included, possessed some virulence, it killed two of the three guinea-pigs into which it was injected.

There was opportunity to make second cultures from two of the students found to be positive. The findings were confirmed in both cases, second cultures from both the nose and the throat of each man contained virulent bacilli. There were no clinical evidences of diphtheria, although both had large tonsils—one, very large. Both thought they had had diphtheria several years before, but were not certain. One was Schick negative, the other was positive. The positive reaction was a typical, clearly cut ++, the redness on the right arm occupying an area about 1½ inches by 1 inch, the left arm showed no reaction whatever.

The Schick tests were made on seven of the students found to be carrying virulent bacilli. Of these, three gave ++ reactions, two gave +, and two gave — reactions (57 per cent negative). In the literature we have seen no previous record of carriers giving positive Schick tests. Such findings would be looked for only in incubatory carriers, but these students gave no clinical indication of the disease during their four weeks at the camp. We have no satisfactory theory to account for such a combination, and hope that the opportunity may come to investigate it further.

Diphtheria Carrier Work—The fact that we found nearly 1 per cent of carriers of virulent diphtheria bacilli among healthy young men between the ages of 17 and 21 is not surprising. In one of the earliest (1894) surveys made in this country, Park and Beebe¹ found 2.4 per cent. They examined 330 healthy persons in New York City. None of these persons were

known to have been in contact with diphtheria, of the eight found positive, two later developed the disease. Pennington² found that 1.4 per cent of well school-children examined by her in Philadelphia were harboring virulent organisms in their throats. Von Scholly and Wilcox³ examined cultures from the throats of 1,000 noncontacts, and in 1.8 per cent found virulent diphtheria bacilli, these were chiefly tenement house children in New York City, in two of which there was a possible history of exposure. In a more recent survey made in Detroit, Goldberger, Williams and Hachtel⁴ found virulent bacilli in about 0.1 per cent of 4,093 persons. These were unselected people not known to have been in contact with diphtheria.

These figures suggest work for future training camps, the results of which might be exceedingly illuminating. At Camp Meade it was possible to take cultures only once, and the time selected was that which would to the greatest extent eliminate the influence of camp conditions. Notwithstanding the fact that nearly 1 per cent had diphtheria bacilli in their throats, no case of the disease developed. Does this mean that there was no transfer of virulent bacilli, or is there another explanation for the freedom from this disease of the 55 per cent of Schick positive persons? The infectious agents were certainly not lacking, and according to our tests there was an ample amount of favorable soil. It would seem that the mechanism of defense of healthy mucous membranes is sufficient to prevent the production of the clinical disease, and that possibly another factor must be active since diphtheria has its highest incidence during those times of the year when common colds are most prevalent. It will be interesting at subsequent camps to make cultures a second time, or better at weekly intervals, in order to learn among other things whether or not the carriers are temporary or chronic, and to follow the distribution of virulent bacilli to the throats of other persons.

TESTS FOR SUSCEPTIBILITY TO DIPHTHERIA

The personnel available for the work was not sufficient to permit the injection of candidates at the time of "processing." It was therefore necessary to make the injection and subsequent examinations at times when those responsible for the military training would not be inconvenienced. For this reason, Schick tests could be made on only 833 persons.

Technic of Injections—The Schick test material prepared by the laboratories of the New York City health board was diluted immediately before proceeding to the building where the injections were to be made. The toxin, contained in capillary tubes, was forced into sterile saline solution, the tubes being rinsed several times. Duplicate dilutions were made with the same lot of toxin and heated in a water bath at 75 C for five minutes. The amount of the diluted toxin injected was 0.2 c.c. and, according to the directions accompanying the packages, this represented one-fiftieth minimal lethal dose for a 250 gram guinea-pig. The syringes used for the injections were of the all-glass, tuberculin type. In preparation for the injection, the flexor surface of the forearm just below the bend of the elbow was rubbed with gauze saturated with a mixture of

¹ Park and Beebe. Diphtheria and Pseudo-Diphtheria. M. Rec. 46 32-31 1894.

² Pennington, Mary E. The Virulence of Diphtheria Organisms in the Throats of Well School Children and Diphtheria Convalescents. J. Infect. Dis. 4 36:50 1907.

³ Von Scholly, Anna I. and Wilcox, Harriet L. A Contribution to the Statistics on the Prevalence of Diphtheria Bacilli in Apparently Normal Throats. J. Infect. Dis. 4 337:346 1907.

⁴ Goldberger, Williams and Hachtel. Report of an Investigation of Diphtheria Carriers. Bull. 101 Hyg. Lab. U. S. P. H. S. 1915, pp. 29-41.

equal parts of acetone and alcohol. The injections were made into the layers of the skin, a distinct bleb being produced in every case. Readings were made two days and seven days after the injections. The results were recorded as suggested by McGuire, Linthicum, Schirch and Nourse.

Recording Results. The method of reading was that followed by Park and his co-workers. For the sake of brevity and convenience in entering results, we adopted the following symbols: ++, positive reactions; +, positive-combined reaction; +—, pseudonegative reaction; —, negative reaction.

The literature describes fully the positive, pseudonegative and negative reactions, but gives little concerning the positive-combined reaction, first noted by Park. This reaction consists of a pseudoreaction on the control side, with a positive reaction superimposed on a pseudoreaction on the test side. Some difficulty is encountered in distinguishing these two reactions at forty-eight hours, but with a little experience they may be easily differentiated at a later reading. The positive and positive-combined reactions indicate susceptibility, while the pseudonegative and negative reactions indicate immunity to diphtheria.

It is to be remembered that these symbols denote merely the type of reaction and do not indicate its severity, for instance, ++ does not mean a reaction approximately double the intensity of that of +, but that in the former case the reaction was not complicated by a pseudo-element, while in the latter a positive reaction was superimposed upon a pseudo-reaction. Thus, ++ and + indicate absence of antitoxic immunity, while +— and — indicate the presence of antitoxic immunity. Table 1 gives a summary of the results of the tests according to organization.

TABLE 1—RESULTS OF SCHICK TESTS IN THE VARIOUS ORGANIZATIONS

Organizations	Reactions			Susceptible		Immune		Total
	++	+	+—	No	%	No	%	
Co A Inf	32	8	17	19	40	53	36	76
Co B Inf	29	14	22	20	43	50	42	85
Co C Inf	29	9	12	29	38	48	41	79
Co D Inf	36	12	13	28	48	54	41	80
Co E Inf	8	3	6	7	11	46	13	24
Co F Inf	39	10	5	28	49	59	33	82
Co G Inf	21	6	7	14	17	56	21	48
Co H Inf	48	13	4	39	61	59	43	104
Troop B Cav	15	3	7	7	18	56	14	32
Bat A Art	30	9	4	16	39	68	20	59
Bat B Art	20	7	2	14	27	66	16	43
Bat C Art	31	5	4	19	36	61	23	59
Med Co No 1	13	3	1	36	16	30	3	33
Totals	251	102	104	216	43.3	350	45	833

The high percentage of susceptibles found in this series—55 per cent—is surprising. According to the findings of others, the percentage of susceptible persons between the ages of 17 and 21 should not have been above 20 to 30 per cent. It will be noted that Medical Company No 1 actually did show 30 per cent susceptible. For the marked difference, we have not been able to find an explanation. The injections were made simultaneously with those of other companies and although the men were living in separate barracks, surrounding conditions and type of work were not sufficiently different to influence the results.

We have carefully reviewed our work in an attempt to learn whether or not the high percentage of positive results obtained might be due to a fault of some kind. We believe that proper technique was used and that the reactions were in practically every case so clearly cut

that there could be no discussion with regard to the results, sometimes two, usually three persons read the reactions together. The strength of the toxin used was questioned. If possibly there had been in the capillary tubes a much larger amount of toxin, or if that present had been especially high in potency, the dose injected might have been not one-fiftieth minimal lethal dose, but one-thirtieth or even one-twentieth. In order to eliminate such a possibility, duplicate sample packages were submitted to the Hygienic Laboratory of the U. S. Public Health Service for test, and it was reported by Dr. McCoy that instead of being too strong, the product was approximately 15 per cent low in potency.

We are therefore inclined to believe that, of the young men tested, 55 per cent possessed no immunity to diphtheria detectable by the Schick test.

In view of the statements frequently made that persons in large cities are more likely to be immune to diphtheria than those from country districts, we thought it would be interesting to analyze our results on the basis of their residence, with regard both to the state and to the size of the community in which they lived, the analysis was extended to include age groups. The results of this analysis are shown in Table 2.

This is the well-known dichotomous chart, and gives all the information needed, we believe, for a thorough analysis of the results. From left to right the totals for each of the states from which the personnel at Camp Meade was derived are divided according to the size of the community, rural being less than 2,500. A rural community is generally considered to be one in which such sanitary arrangements as sewage disposal and controlled water supply are lacking. Communities between 2,500 and 10,000 are likely still to be of the rural type from the standpoint of sanitation. Those above 10,000 are frequently as well equipped as are cities of 100,000 and over.

At the bottom are shown the totals for the communities of these sizes. In the columns, the results are grouped according to ages. A very few boys less than 17 years of age found their way into the camp, but the proportion is insignificant. In the 20 and more group, about 10 per cent were above 20 years of age. These were spread over so many different ages, however, that it was not thought worth while to make special note of them. The number of individuals showing reactions of the various types are recorded as well as are the total number of positives, that is, those showing ++ and + reactions, and the total number of negatives—those showing +— and — reactions—together with the percentages of those susceptible and those immune in each group.

At the right are given the totals for all ages analyzed with regard to types of reaction, and numbers and percentages of those susceptible and those immune.

At the lower right hand corner are the grand totals, the bottom line showing, as is noted in Table 1, that 55 per cent were susceptible and 45 per cent immune as indicated by the Schick test.

The figures in most instances are so low that the differences have no conclusive significance. The total number here is less than that in Table 1 for the reason that in every instance in which complete data were unavailable the individual concerned was dropped. Although the figures are small, it is impossible not to call attention to the differences in susceptibility of persons living in rural Pennsylvania and in rural Virginia, the proportion being constantly in

vania This fact is made still more interesting on examining the diphtheria rates in the two states, since it is found that the mortality rates in Pennsylvania have throughout the census period been higher than those in Virginia The average temperature of Virginia is higher than that of Pennsylvania, which would suggest a reason for less diphtheria in Virginia, but it would not explain the great difference in the percentage of susceptible persons in the rural communities of the two states

The form of Table 2 permits the recording of so much information in a small space that it is hoped

no military importance The results of this survey indicate that it is potentially a serious menace and one still far from final eradication

EXAMINATION OF FECES FOR OVA OF THE
INTESTINAL PARASITES

It was believed that information of interest might be revealed through a search for evidences of intestinal infestation in the particular group of men at this camp The states represented, with the exception of Virginia, are just north of the region in which the hookworm is prevalent In making the survey with the primary

TABLE 2—RESIDENCE WITH REGARD TO STATE AND SIZE OF COMMUNITY AGE GROUPS TYPES OF REACTIONS AND PERCENTAGES OF SUSCEPTIBLE AND NONSUSCEPTIBLE PERSONS

Size of Community	Age Groups																																			
	17 and Less								18								19								20 and More											
	Reac- tions				Suscep- tible				Im- mune				Reac- tions				Suscep- tible				Im- mune				Reac- tions				Suscep- tible				Im- mune			
	++	+	+	-	No	%	No	%	++	+	+	-	No	%	No	%	++	+	+	-	No	%	No	%	++	+	+	-	No	%	No	%				
Pennsylvania																																				
Rural	24	2	2	4	26	81	6	19	13	1	2	5	14	87	7	33	6	1	4	0	7	44	9	56	15	1	1	1	16	89	2	11				
2,500+	19	7	7	13	26	50	20	44	24	2	7	17	26	52	24	43	8	4	3	9	12	50	12	50	12	2	2	11	14	52	13	48				
10 000+	16	7	5	10	23	61	15	39	18	6	3	9	24	67	12	33	4	6	3	8	10	48	11	52	9	4	8	7	13	47	15	53				
100 000+	16		5	7	16	57	12	43	10	5	3	18	15	42	21	53	3	2	4	6	5	33	10	67	11	3	1	7	14	64	8	36				
Total	75	16	19	34	91	63	53	37	65	14	15	49	79	55	64	40	21	13	14	28	34	45	42	55	47	10	12	26	57	60	38	40				
Maryland																																				
Rural	6	1	2	2	7	63	4	37	5	1	1	1	6	75	2	20	3			1	3	75	1	25	4		1	2	4	57	3	43				
2 500+																																				
10 000+																																				
100 000+	10				10	67	5	33	1	2		11	3	27	11	73	3		1	3	3	43	4	57	3	3		8	6	43	8	57				
Total	16	1	2	7	17	65	9	35	6	3	2	13	9	38	15	62	8		1	4	8	6	5	38	7	3	1	12	10	42	13	58				
Dist Columbia																																				
100 000+	6	4	2	6	10	55	8	45	8	4	1	1	12	86	2	14	3		2	4	3	33	6	67	4	2	1	2	6	67	3	33				
Virginia																																				
Rural	4	7	3	12	11	42	15	58	9	2	5	8	11	46	13	54	9	1	1	1	10	84	2	16	4	2	2	7	6	40	9	60				
2 500+	1	1	2	4	2	25	6	75	5	3	1	2	8	73	3	27				1			1		3		1	4	3	33	5	67				
10 000+			1	1		2			2			2	2	50	2	50											1	1	1	1	33	2	67			
100 000+		2			1	33						1			1		1	1		1	2	67	1	33				3		3						
Total	5	10	6	18	15	38	24	62	16	5	6	13	21	53	19	47	10	2	2	2	12	75	4	25	7	3	4	15	10	35	19	60				
Totals																																				
Rural	34	10	7	18	44	69	25	31	27	4	8	14	31	59	22	41	18	2	5	7	20	63	12	37	23	3	4	10	6	60	14	35				
2 500+	20	8	9	17	28	52	26	48	29	5	8	20	34	55	28	42	9	4	4	9	13	50	13	50	15	2	3	15	17	49	18	51				
10 000+	16	7	6	11	23	58	17	42	20	6	4	11	26	63	15	37	5	6	3	8	11	50	11	50	9	5	9	10	14	42	19	58				
100 000+	32	6	7	19	38	59	26	41	19	11	4	31	30	40	35	54	10	3	7	14	13	38	21	62	18	8	2	20	26	54	22	43				
Total	102	31	29	60	133	59	94	41	95	26	24	76	121	50	100	40	42	10	19	38	57	50	57	50	63	18	18	50	83	53	73	47				
SUMMARY																																				
Size of Community	Reactions				Susceptible		Immune		Size of Community	Reactions				Susceptible		Immune																				
	++	+	+	-	No	%	No	%		++	+	+	-	No	%	No	%																			
Pennsylvania									Virginia																											
Rural	28	5	0	15	63	72	24	18	Rural	26	12	11	28	38	49	39	51																			
2 500+	63	10	19	50	78	53	69	47	2 500+	9	4	5	10	13	46	15	54																			
10 000+	47	23	19	34	70	57	53	43	10 000+	2	1	2	4	3	33	6	67																			
100 000+	40	10	13	38	50	50	51	50	100 000+	1	3		6	4	40	6	60																			
Total	208	38	60	137	261	56	197	44	Total	38	20	18	48	58	47	66	53																			
Maryland									Totals																											
Rural	18	2	4	6	29	67	10	33	Rural	102	19	24	49	121	62	73	38																			
2 500+	1			1	1	50	1	50	2 500+	73	19	24	61	92	52	85	48																			
10 000+	1		1	2	1	25	3	75	10 000+	16	24	22	40	74	54	62	46																			
100 000+	1		1	27	22	44	28	56	100 000+	39	28	20	84	107	51	104	49																			
Total	37	7	6	36	44	51	42	49	Total	304	90	90	234	394	55	374	45																			
Dist of Columbia																																				
100 000+	1	10	6	13	31	61	19	39																												

such studies made in the future will be analyzed in an identical manner in order that the results from year to year may be added, and figures finally obtained which will have definite significance It is realized that in comparing rural Virginia with rural Pennsylvania on the basis of the figures we have so far, it is not possible to do more than call attention to a point to be borne in mind in future studies

With regard to the susceptibility of persons from rural districts as compared with those from cities, it is seen that a greater proportion of the city boys were immune

There is sometimes apparent an inclination on the part of some persons to consider diphtheria a disease of

object of ascertaining the number of carriers of hookworm ova, the finding of other parasites was likewise noted

The technic used was that attributed to Barber⁶ Specimens were collected in new, clean homeopathic vials which were labeled and brought to the laboratory Here about 5 gm of the feces was thoroughly mixed with about 15 c c of saturated sodium chlorid solution containing 10 per cent of glycerin This mixture was allowed to stand generally from fifteen minutes to about two hours, when about 0.5 c c of the upper layer was transferred to a microscope slide on which had been

⁶ Medical War Manual No. 6 Laboratory Methods of the U. S. Army, Ed. 2 Philadelphia 1919 p. 49

made a large, heavy ring with a wax pencil. With the low power of the microscope, every part of the drop was examined thoroughly, a mechanical stage being used.

Specimens from 750 persons were studied. The ova found were *Taenia solium*, 1, *Ascaris lumbricoides*, 5, *Trichuris trichiura*, 2, *Oxyuris vermicularis*, 1, hookworm, 1, total, 10, or 1.33 per cent. The single hookworm carrier was from rural Virginia. The person whose feces contained eggs of *Taenia solium* was brought to the hospital and treated. A large part of the tapeworm was recovered, but it was unfortunately thrown out before examination could be made. The chief point of interest at the outset, as already noted, was to learn how many hookworm carriers there might be among young men coming from what might be considered the border states. The finding of but one from a rural community in Virginia would be surprising were it not for the fact that the type of young man found in a military training camp is usually above the average for the community.

In such surveys it is customary to note the percentage of those who have lived in the tropics or who have had service overseas. A few of the students at Camp Meade had been in the army during the war, but their percentage was insignificant.

While numerous surveys have been made for the identification of persons harboring intestinal parasites, the only one with which we are acquainted in any way comparable with the study made by us is that of Koroid.⁷ In the survey reported by him, the findings among 126,140 men are given. These were men "who entered the army from the hookworm area, or had resided there for six months or more, or who had formerly lived in that area but emigrated to other states of the Union. The data, therefore, are fairly representative of the normal population of males of military age only for states of the hookworm area and only those males of military age who in other states might have acquired the infection by reason of Southern residence."

The results reported by Koroid among men born in the states from which those at Camp Meade were drawn are given in Table 3.

TABLE 3—RESULTS REPORTED BY KOROID

State of Birth	Positive		Number of Men Examined
	Per Cent	Number	
Pennsylvania	0.3	4	1,074
Maryland	2.1	12	584
District of Columbia	1.6	2	121
Virginia	6.7	65	969

These results show a much higher infestation rate among men from the same localities. We cannot believe that differences in technique are responsible for the low rate found by us at Camp Meade. If it seemed necessary to account for our relatively low figures, we should probably call attention again to the superior type of the persons making up our group.

SEARCH FOR CARRIERS OF MEMBERS OF THE TYPHOID-PARATYPHOID-DYSENTERY GROUP

As soon as possible after the receipt of specimens of feces at the laboratory, a suspension was made in saline solution and a drop of this was streaked over the surface of culture mediums in two plates. One

plate contained Endo medium, the other, lactose-litmus agar. In about half the cases these cultures were made within one hour after the collection of the specimens, in the other half, the delay was from one to five hours, so that dysentery bacilli of the Shiga type, if present, might have been lost.

The cultures were incubated at 37 C over night and then examined in a good light, careful search being made for nonlactose fermenting colonies. The plates were then returned to the incubator, where they were kept for a second twenty-four hours and reexamined. Colonies which showed no evidence of acid formation were studied closely, and if they bore any resemblance to the organisms in question they were fished to a section of a lactose-litmus agar plate. About eight different colonies could be transplanted conveniently to a single plate. The use of a Petri dish, in this way, for the primary fishings, saves culture medium and infinite labor. The plates thus inoculated were incubated over night, and nonlactose fermenting colonies which were possibly gram-negative asporogenic bacilli were stained, fished to Russell double sugar agar, and studied further.

The few cultures deemed worthy of final identification were sent to the Army Medical School in Washington, where they were studied by Captain H. A. Davis, Medical Administrative Corps. He reported:

B 644 is a gelatin liquefier and is probably a member of the proteus group.

F 2 is an intestinal organism not fermenting lactose, and according to the classification of Graham Smith would be placed in Group I Subgroup d.

F 5 is of the same class and falls in Group H, Subgroup h.

I 44 is *Bacterium alkaligenes*.

39 is placed in the intestinal group as of Group H, Subgroup d.

78 is placed in the intestinal group as Group K Subgroup b.

The result of this work is therefore that no member of the typhoid-paratyphoid-dysentery group of bacteria was isolated and identified from any of the specimens studied. It is in conformity with these findings that during the training period no clinical case of intestinal infection was reported.

SUMMARY

During the August training period at the Citizens' Military Training Camp at Camp Meade, Md., in 1922, a beginning was made to take advantage of the unusual opportunities for epidemiologic surveys thus afforded.

Cultures were made from the throats of 1,080 students, and these were studied for the presence of virulent diphtheria bacilli. In 0.83 per cent of the cultures virulent diphtheria bacilli were found, indicating that nearly 1 per cent of the young men coming to the camp carried virulent diphtheria bacilli in their throats.

The Schick test for susceptibility to diphtheria was made on 833 of the students with the result that 55 per cent of them reacted positively, indicating the absence of antitoxic immunity. In spite of this high rate of susceptibility and the number of persons in close association with them carrying diphtheria bacilli in their throats, no clinical diphtheria developed during the training period. Among seven of those found to be carrying virulent diphtheria bacilli, three gave positive Schick tests; the others were immune.

A study of specimens of feces from 750 of the students revealed parasites in ten, or 1.3 per cent. One of these, a young man from rural Virginia, was found to be a carrier of the hookworm.

7. Koroid. The Geographical Distribution of Hookworm Infection in the United States. Detected in Army Recruits. Am. J. Trop. Med. 2: 389-396, 1922.

The same 750 specimens of feces were studied culturally for the presence of members of the typhoid-paratyphoid-dysentery group of bacilli, but no evidence of a carrier of a member of this group was discovered

CONCLUSIONS

In concluding the report of this work, we express the hope that each year increased facilities may be given the Medical Department for carrying out surveys such as are indicated herein and for such extensions of the work as will be indicated from time to time. We believe that in no other way can the army better serve the public health, and building up the health of the nation is as much a measure of national defense as is drilling and target practice, on the one hand, or the production of gases and high power arms, on the other.

This plea can be supported in no better way than by quoting from the recent work by Nichols.⁸

On the technical side, carrier work in the military services is of course the same as elsewhere, as the putting of a uniform on the host does not affect the parasite. There are, however, several special factors in epidemiology and administration among soldiers which do affect the work in a peculiar way. Personal contact is much closer and more constant among troops in barracks or in the field than among private citizens. Hence, the chances for the functioning of carriers are particularly good. On the other hand, diagnostic and control measures, when approved, can be carried out more exactly on account of military discipline. Again, the high standard of laboratory facilities which has been maintained in the United States Army since the days of Sternberg tends to make carrier work easier than in some other places. It may, therefore, be said that conditions in the Army, and the same is true of the Navy, offer unusual need and opportunity for carrier work. The drawbacks are lack of time for proper examination, lack of facilities for the mass of work, and lack of control due either to an emergency or to official non-support.

During the war, carrier work eventually reached a high state of technical perfection, as so many well trained medical officers and assistants were available. The degree to which the carrier program was actually used to control the situation varied with the circumstances. Now that the military establishments are contracted to a peace basis, this work has necessarily become limited. But since the work of the military organizations is now largely educational in connection with National Guard and the Reserves, the principles learned should not be forgotten. This new knowledge should be applied on as large a scale as possible, as a measure of education and preparation.

8 Nichols H. J. Carriers in Infectious Diseases (with a Chapter on Carriers in Veterinary Medicine by R. A. Kelser) Baltimore 1922

The Conduct of an Individual—Human behavior is the outcome of an infinite complexity of interacting factors. The conduct of an individual could only be completely intelligible if we possessed a full knowledge of his inherited tendencies, his instinctive and emotional equipment, his intellectual capacities, and his general physical condition. In addition to this information, we should also have to obtain a detailed life history of the individual in order to understand the various habits and inhibitions which had been built up on the foundations of his physical, intellectual and emotional endowments. The most difficult subject which we should have to study in our search for an understanding of human behavior is probably that of the instinctive and emotional life, yet in the final analysis we should undoubtedly find that these factors outweighed all others in the causation of the conduct of an individual, so that we should be well repaid for our effort. There is no other single factor which has so much influence on the development of the personality as the parental environment—Abnormal Behavior, Sands and Blanchard, Moffat, Yard and Company, 1923.

STUDY OF ISO-AGGLUTININS BEFORE AND AFTER ETHER ANESTHESIA*

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According to Levine and Segall,¹ prolonged etherization may cause a temporary change in the iso-agglutinative phenomena. The authors report three cases in which the serum before anesthesia was compatible, by direct tests with the blood of prospective donors, but after a period of ether anesthesia of the patient, agglutinated the corpuscles when tested against the same blood. The change in agglutination was only temporary, but the observation, which should be extended, suggests that ether, being a lipid solvent, may change the state of the blood in such a way as to modify the action of the iso-agglutinins present.

The observations of these investigators interested us greatly, as we had never observed untoward results from transfusions following ether anesthesia, when the bloods were matched before the operation. The studies reported in this paper were begun in an attempt to determine whether there was a change in the iso-agglutinative phenomena, and, if so, why we did not obtain noticeable effects on patients on whom transfusion was performed after prolonged ether anesthesia.

METHODS

Twenty-five patients about to undergo operation were selected for study. Cross-agglutination tests were performed on each of these patients, as follows. The serum of each patient was mixed in hanging drop preparations with fresh, washed red blood cells of Groups I, II, III and IV (Moss).² The washed red cells of the patients were mixed with the fresh serums of Groups I, II, III and IV. The serum and cells were obtained from the patients (1) before ether anesthesia, (2) immediately after operation, or before the patient recovered from anesthesia, (3) one hour after operation, (4) two hours after operation, (5) three hours after operation, and (6) twenty-four hours after operation. The microscopic tests were made in duplicate, as follows. A drop of each serum plus a drop of 1 per cent suspension of the washed cells in isotonic salt solution was mixed on a cover slip, which was then inverted over a hollow ground slide. All red cells were washed three times with physiologic sodium chlorid solution. The slides were examined immediately to determine whether the preparations were satisfactory, again after one hour in the incubator at 37 C., and finally after twenty-four hours at 20 C.

The methods of examination of the blood as shown in Table 1 were used in the twenty-five cases studied.

Parallel series of tests were carried out in each case to determine the effect of ether *in vitro*. The serum of each of the Groups I, II, III and IV was tested against red blood cells of Groups I, II, III and IV.

* From the Biological Division of the Medical Clinic the Johns Hopkins Hospital.

* Owing to its large size Table 2 is omitted from the article as published here. It will appear in the authors' reprints.

¹ Levine E. C. and Segall H. N. Posttransfusion Reactions Alterations in Blood After Ether Anesthesia and After Blood Transfusion. Surg. Gynec. & Obst. 35: 313 (Sept.) 1922.

² Moss's classification is used for the reason that one is unable to distinguish in Jansky's descriptions Group II from Group III. A free discussion of this point by C. G. Guthrie and J. G. Huck will appear in the Johns Hopkins Bulletin February, March and April 1923. On the Existence of More Than Four Iso Agglutinin Groups in Human Blood.

The serums were shaken for one hour with ether. The ether was left in contact with the serums for four hours in the incubator at 37 C. After this time the serums were again tested against red blood cells (1 per cent suspension) of each Group I, II, III and IV, and again four hours later.

TABLE 1—FINDINGS IN CASE 1*

Time	Color of Patient's Serum	Patient's Serum			Patient's R. B. C. 1% Susp.			Group
		Known R. B. C. Group	Read ing After 1 Hr 37 C	Read ing After 24 Hr 20 C	Known R. B. C. Group	Read ing After 1 Hr 37 C	Read ing After 24 Hr 20 C	
		1% Susp			1% Susp			
Before operation	Yellow clear	I	+	+	I	0	0	IV
		II	+	+	II	0	0	
		III	+	+	III	0	0	
		IV	0	0	IV	0	0	
Immediately after operation	Pink clear	I	+	+	I	0	0	IV
		II	+	+	II	0	0	
		III	+	+	III	0	0	
		IV	0	0	IV	0	0	
One hour after operation	Yellow clear	I	+	+	I	0	0	IV
		II	+	+	II	0	0	
		III	+	+	III	0	0	
		IV	0	0	IV	0	0	
Two hours after operation	Yellow clear	I	+	+	I	0	0	IV
		II	+	+	II	0	0	
		III	+	+	III	0	0	
		IV	0	0	IV	0	0	
Three hours after operation	Yellow clear	I	+	+	I	0	0	IV
		II	+	+	II	0	0	
		III	+	+	III	0	0	
		IV	0	0	IV	0	0	
Twenty four hours after operation	Yellow clear	I	+	+	I	0	0	IV
		II	+	+	II	0	0	
		III	+	+	III	0	0	
		IV	0	0	IV	0	0	

* Pyloroplasty ether anesthesia duration two and one-half hours + agglutination 0 no agglutination

RESULTS

The findings in this series of twenty-five cases are decisive. In this series, in Table 2 are collected two patients of Group I, nine of Group II, four of Group III and ten of Group IV. In five cases the patients were started with gas followed by ether, and twenty-five patients had ether throughout. The duration of the period of anesthesia varied from one to four hours. In all cases the serum was found to have a pinkish

hue immediately after operation, the blood group was determined to be IV, one hour after operation, the grouping was IV, two hours after operation, IV, three hours after operation, IV, and twenty-four hours after operation the blood group was determined to be IV. The findings were the same throughout all cases examined, regardless of the group in which the patient's blood was placed.

No change in group resulted from the effect of ether *in vitro* (Table 3).

COMMENT

In none of our cases was the shift described by Levine and Segall observed. All the reactions remained definite in each instance. One hour's shaking with ether, and four hours in contact at 37 C, failed to produce any shifting of the blood in any of the twenty-five cases. Only one of the findings of Levine and Segall was corroborated in this series, *viz*, the serums of the patients had acquired after ether anesthesia a pinkish hue.

CONCLUSIONS

1 There is no change in the blood groups after ether anesthesia.

2 No change of iso-agglutinative phenomena was produced by shaking with ether for one hour, or four hours' contact at 37 C.

3 Transfusions can be performed safely within twenty-four hours after prolonged ether anesthesia, provided a suitable donor has been found previous to the beginning of anesthesia.

4 If severe reactions occur from transfusions after ether anesthesia, they are apparently due to some other cause and not to a change in iso-agglutinative phenomena.

CHRONIC INFECTIOUS ARTHRITIS*

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Modern notions concerning the influence of focal infections on the production of rheumatism may be responsible for a certain sense of security and of satisfaction with regard to the etiology and classification of this disease. Nevertheless, the subject of chronic infectious arthritis offers great difficulties from the standpoint of both clinical and experimental investigation.

The present study was undertaken for the purpose of inquiring into the classification of chronic infectious arthritis, the validity of the idea of focal infection as a cause, and the results of the usual nonspecific "shock" therapy.

It was thought that the investigation of a large number of records in a hospital such as Barnes Hospital might result in finding the answers to these questions or in finding the refutation of certain notions usually accepted as accurate. Various attempts have been made to classify arthritis, but most classifications are unsatisfactory because the great majority of cases of chronic arthritis have been without proved etiology; therefore, classifications have been based on anatomic and symptomatic changes.

It might be convenient to separate the proved bacterial cases from those which, while possibly infectious in origin, have so far eluded our efforts to discover the invading organisms. Thus we can easily understand those metastatic inflammations of joints in which the exudate shows a typical pyogenic character.

From the *Academy of Medicine*

TABLE 3—EFFECT OF ETHER

Group I Serum			Group II Serum			Group III Serum			Group IV Serum		
Known R. B. C. 1% Susp	Read ing After 1 Hr 37 C	Read ing After 24 Hr 20 C	Known R. B. C. 1% Susp	Read ing After 1 Hr 37 C	Read ing After 24 Hr 20 C	Known R. B. C. 1% Susp	Read ing After 1 Hr 37 C	Read ing After 24 Hr 20 C	Known R. B. C. 1% Susp	Read ing After 1 Hr 37 C	Read ing After 24 Hr 20 C
I	0	0	I	+	+	I	+	+	I	+	+
II	0	0	II	0	0	II	+	+	II	+	+
III	0	0	III	+	+	III	0	0	III	+	+
IV	0	0	IV	0	0	IV	0	0	IV	0	0
Shaken with 1 ether			Shaken with 1 ether			Shaken with 1 ether			Shaken with 1 ether		
I	0	0	I	+	+	I	+	+	I	+	+
II	0	0	II	0	0	II	+	+	II	+	+
III	0	0	III	+	+	III	0	0	III	+	+
IV	0	0	IV	0	0	IV	0	0	IV	0	0
In Contact with Ether 4 Hours			In Contact with Ether 4 Hours			In Contact with Ether 4 Hours			In Contact with Ether 4 Hours		
I	0	0	I	+	+	I	+	+	I	+	+
II	0	0	II	0	0	II	+	+	II	+	+
III	0	0	III	+	+	III	0	0	III	+	+
IV	0	0	IV	0	0	IV	0	0	IV	0	0

tinge when collected immediately after operation, but at all other times it was a clear yellow. The ages of the patients varied from 16 to 65 years.

In no case examined did the blood groups change in any degree after ether anesthesia. As in Case 1, the blood group was determined to be IV by cross-agglutination with all four groups before operation. Imme-

hemolytic streptococci or gonococci, and then the great group of acute rheumatic fever cases stand out in relief by virtue of their characteristic clinical performance and the invariability of heart disease. With the great remainder, our efforts must be directed first to finding important points of difference which would suggest a classification, and to testing various forms of treatment, and, from the information thus gathered, to carry on our efforts in the experimental laboratory with the hope that with such diseases reproduced either entirely or in some of their main features, logical conclusions might follow.

The cases here reported were designated chronic infectious arthritis. It has been the habit at Barnes Hospital to exclude the proved bacterial cases from this classification, but it has also been the habit to designate the disease acute rheumatic fever as acute infectious arthritis without regard to its claim to distinct individuality.

It was my desire to study all the cases from the beginning of Barnes Hospital to the present. There are about 400 cases listed under the heading of chronic infectious arthritis, but the nature of the investigation demands so much of critical review of histories, of interpretation and of inferential conclusions, where justified, that the process of study turned out to be very laborious, therefore, slightly more than a hundred cases are ready for consideration.

As already stated, none of these studied cases gave positive bacteriologic findings as far as the joints were concerned. When the source of infection was proved, the proof was from clinical evidence and serologic tests.

METHOD

Each history was examined for information concerning the sex, age, duration of disease, occupation, family history, clinical course, physical examination, type of rheumatism present, treatment and outcome.

Most of the histories examined were written since 1913, but a few are included of patients who entered the hospital before Billings had popularized the idea of focal infection. It was interesting to note the difference in clinical attitude before and after the work of Billings. In the earlier histories, the examinations were meager, there was an evident lack of knowledge of attacking the problem, and this was invariably reflected in the word "unimproved" at the end of the history. After 1912 there was to be seen a sudden increase in the diagnostic activity devoted to the exploration of all localities which might harbor infection. Treatment was likewise more energetic, and the word "improved" began to appear more frequently. Then, as this energetic diagnostic effort and diversified treatment with bakes, vaccines, proteose and typhoid vaccine inoculations were carried on over a number of years, an element of doubt about the reality of the improvement became apparent. Indeed, not only have physicians passed through these changes of sentiment, but the patients themselves have often overestimated the relief which followed a given treatment, only to recognize later the fleeting character of the relief.

It is useful to study a series of cases of this kind because it reveals how important the doctrine of focal infection has been in stimulating physicians to search for and removed sources of infection wherever they might be in the body. Such a study also reveals the types of cases in which therapeutic failures occurred, and emphasizes the need of more penetrating research into the cause of disease in such cases. It emphasizes to no less a degree the successes that have occurred,

and indicates the percentage of patients who have been benefited by sheer thoroughness in diagnosis and enthusiasm in treatment.

RESULTS

Twenty-four cases were chronic cases of arthritis which began as acute rheumatic fever. In nearly all instances the chronicity was dependent on neglect or inadequate treatment. All cases responded readily to salicylates, and the patients left the hospital "recovered," as far as arthritis was concerned. These cases can be readily separated from other types of rheumatism by this ability to recover and by the invariable coincidence of a heart disease, usually mitral stenosis. The statement that acute rheumatic fever is heart disease is strikingly illustrated in this group. The joint changes are trivial, and, although attended by intense inflammation, the arthritis is not permanent. This is a disease of early life, differing sharply in this feature from arthritis deformans. It occurs in attacks. Tonsillitis and pharyngitis usually precede its onset, and there is usually another case in the family.

One of the cases of chronic arthritis which began as acute rheumatic fever is interesting as suggesting a basis for certain joint symptoms and changes which will be commented on later.

A girl, aged 14, became ill in the usual way with pharyngitis, acute rheumatic fever, mitral disease and acute pericarditis, which persisted as chronic adhesive pericarditis. Such cardiac embarrassment obviously hindered both her muscular development and her general nutrition. We might call to mind, in passing, the peripheral joint changes associated with poor ventilation in the lungs and called pulmonary osteoarthropathy. The patient began to have joint pains and stiffness several years after the onset of pericarditis. This pain and the stiffness were progressive, and when the patient returned to Barnes Hospital she was the picture of under-nutrition and discomfort. She had no true arthritis, yet most of the small joints were stiff and painful.

The bone change was simple atrophy. Might it not be possible that inadequate circulation secondary to cardiac inadequacy is responsible for this atrophy? We are familiar with the pain that attends obliterating arterial disease, the joint pain suffered in this case, for which there is no explanation in the roentgenograms, may be based on circulatory deficiency.

In this connection, two cases in the series are worthy of attention. A man, aged 56, had had attacks of acute arthritis for eighteen years, usually involving knee or ankle. A man aged 47, had had similar attacks for twelve years. Both had purulent prostatitis, both had auricular fibrillation. The latter condition was adjusted with quinidin, and marked improvement in the arthritis, with relief of pain, followed. We might recall that many of our measures to relieve arthritis influence the local circulation. Such treatment as Bier's hyperemia, "baking" and perhaps the so-called "shock" treatment with its fever and increase of pulse rate achieves the same result.

The possible influence of circulation on joints is further suggested in a type of case familiar to all. This is the old person with evident arteriosclerosis who begins to have stiffness of the fingers, with subsequent thickening and slight distortion of the knuckles, these changes usually involving the toes as well. How much infection enters into this form of rheumatism cannot be estimated. There were four such cases in this series. The patients were 61, 69, 70 and 71 years of age, no foci of infection were found. The validity of this idea of the influence of circulation on conditions about the joints could be investigated experimentally.

We have noted the absence of change in the joints of acute rheumatic fever. In marked contrast are the roentgen-ray findings in gonorrheal rheumatism, of which there were three cases of long duration. This is fairly typical of any bacterial arthritis. Destructive changes in the cartilage are apparent. Infiltration of the periarticular tissues is extensive. We have found the gonococcus complement fixation test uniformly positive in these cases and in all our acute cases of this type.

Three cases of gout were present in this series, one of them being very well studied. This patient, a man, showed not only an increased uric acid, greater than usually found in arthritis, but incidentally displayed a certain degree of diabetes insipidus and an enlarged sella.

There were two cases of syphilitic arthritis characterized by exacerbation of pain at night. There were four cases of tuberculous arthritis—the typical spindle-shaped fingers. This leaves two groups of patients, one of which includes the cases of arthritis deformans, twenty-three in number, and the other, those cases not belonging to any of the mentioned groups, thirty-five in number, in which there was complaint of chronic rheumatism involving one or several of the larger joints, and in all of which the inflammatory character of the arthritis and the roentgen-ray changes spoke for bacterial invasion, even though this invasion could not be demonstrated.

The group of patients suffering from arthritis deformans presents the usual features emphasized in all clinical descriptions of the disease. Of the twenty-three cases, only three were in men. The average age at the onset was 39, and the average duration at the time of admission was nine years. In none of these cases was there a significant focus of infection. In nearly all, the teeth were reported as being in bad condition, but neglect of the teeth was inevitable. Frequently tonsillectomy was done, not because the tonsils were considered the source of infection, but because the consultant regarded tonsillectomy advisable in view of the prevailing adherence to the idea. Whatever future investigation may reveal, there is no basis in examination of these patients for believing that an infected focus is the cause of arthritis deformans. There is definitely another factor—perhaps the factor of a physical type, certainly the factor of age. The gradual onset of painful swelling of the fingers is characteristic. The visible changes are out of proportion to the meager roentgen-ray evidence of atrophy and hypertrophy.

The treatment of these cases has included tonsillectomy, extraction of teeth, treatment of nasal inflammations, bakes, Pemberton diet, inoculation with vaccines of streptococcus and of pneumococcus, and "shock" treatment with intravenous injection of proteose and typhoid vaccine. Frequently, after suffering chill and fever following typhoid vaccine, the patient has described improvement in the affected joints. This has proved transitory, and no other benefit has followed any form of treatment used. A tuberculin test made in six of the cases was negative.

This brings us to the remaining cases, thirty-five in number, of chronic infectious arthritis. Unlike the preceding group, which began with painful stiffening of the fingers and toes, twenty-four of this group describe involvement of a large joint as the beginning of illness. This involvement is attended by outspoken periarticular swelling, frequently hot and red. The illness fluctuates in severity, but the patient does not recover entirely. Later on these patients may have the swelling and stiffness in small joints, and the impression

is conveyed that the later development is of the nature of a superimposed arthritis deformans or the venereal type of arthritis referred to before. In this group the most exhaustive diagnostic search was made. The examination of every system, always by specialists was made. Treatment included all the agencies mentioned before. In spite of exhaustive search, fourteen cases, or 58 per cent of this class of cases, failed to reveal a source of infection that was convincing. The treatment was usually the same in those cases in which no satisfying focus was found as it was in these in which some important local infection was discovered. This is a very important point, as the study of the results in the two groups indicates. First, in the group in which a focus was found, the foci which seemed unquestionably associated with the development of arthritis occurred as purulent prostatitis three times, purulent seminal vesiculitis, once, purulent otitis media, twice, purulent cholecystitis, once, cholelithiasis, once, purulent rhinitis, once, and hemolytic streptococcus pharyngitis, once. The treatment given these patients, as said before, was similar to that given those patients in whom no focus was found, with the exception that the discovered focus was actively treated by irrigation or by removal. No improvement is reported in three of these cases. Cholecystectomy relieved the patient with purulent cholecystitis, and vasotomy relieved the arthritis in the patient with purulent seminal vesiculitis. In the group of patients in whom no important focus could be found, seven were reported improved, five unimproved, and two were not treated. Thus, it will be seen that there is very little difference in the effect of treatment of these two groups.

The part which tonsillectomy plays in the improvement of arthritic symptoms is interesting. This operation was frequently followed by relief, which, though temporary, was nevertheless definite to the patient and usually visible. It raises the question of nonspecific effect, and this is further suggested by the case of one of these patients in whom appendectomy was followed by similar definite, though temporary, relief. Perhaps the changes in the body incidental to anesthesia and hemorrhage, followed, as they usually are, by slight fever and leukocytosis, are not unlike the changes following the inoculation of typhoid vaccine.

With regard to the other forms of treatment it may be said that baking was sometimes comfortable and sometimes disturbing as far as the patient was concerned. No definite effect on the rheumatism was noted in the history. The inoculation of proteose was always followed by a definite reaction, but on account of the uncertainty of the chemical product this mode of "shock" treatment was supplanted by the intravenous injection of typhoid bacilli. The usual initial dose was from 25 to 50 millions, repeated in ascending doses every five days so that at the end of about ten weeks a patient might be receiving one billion bacteria at a dose. This increase in dosage was found necessary because, once inoculated, the patient invariably required greater doses to produce chill, fever and leukocytosis. Frequently definite improvement could be traced to a series of such injections.

The influence of an intercurrent infection was noted in one of the cases of chronic infectious arthritis in which chronic proctitis seemed to be an important focal infection.

The arthritis was of the usual hypertrophic type, involved the right elbow and right knee. The joint changes typical of this group of cases was limited to the

contained about 5 per cent of endothelial cells and 95 per cent of polymorphonuclear leukocytes. Treatment of the proctitis for one month failed to change the arthritis. The patient became ill with a prevailing infection, characterized by headache and pharyngitis, which was loosely called grip. Fever prevailed for six days. The knee joint measured 37 cm in circumference before this infection. A pronounced improvement of the arthritis was described by the patient, during this illness. Stiffness disappeared, and free movement was possible. The joint circumference diminished to 32 cm and local thickening. Heat and congestion subsided. The leukocyte count was 11,000. Blood culture was negative. Throat culture showed a predominating gram-negative hemolytic bacillus, easily cultivated. After this infection subsided, the joints remained in good condition until the patient attempted their use, when the condition reverted to its original state.

Another interesting nonspecific effect was produced in another case of the same type of arthritis.

The knee was inoculated with 5 c.c. of 1 per cent solution of gelatin having a pH of 4.7. Local heat, swelling and pain followed. Fever of 100 F. persisted for three days. A leukocytosis of 20,000 occurred. Culture of the joint fluid was sterile. All the joint signs subsided, and the local condition was better than it had been in two years, according to the statement of the patient. The periarticular tissues were soft, the bony prominences were easily felt and were not tender. But when the patient attempted to use the knee, the previous condition of effusion, periarticular thickening, pain on use, and tenderness recurred.

It is unfortunate that we have not followed up these cases of chronic infectious arthritis in a way sufficient to show the present condition, and it is impossible to say how long the improvement recorded in this group of twenty-four patients has persisted. As a group, they offer encouragement to the effort to use all possible measures to discover infected foci. The high percentage of improvement recorded in those cases in which no focus was found seriously argues against the accuracy of our reasoning from cause to effect—from focus to arthritis. However, the subject is one which allows free play to philosophical discussion, but is one which, by the very nature of the process involved, evades accurate decision.

There remains to discuss eleven cases which, on account of their relative frequency and the uniformity of symptoms and invariable existence of active prostatic infection, invite our attention. These are patients, usually between the age of 35 and 50, who complain of backache. No doubt they have been told, in the absence of roentgen-ray evidence, that they had "sacro-iliac strain." The distribution of the lesion in these cases is remarkably constant, consisting, usually, of destructive changes in the fifth lumbar vertebra. Treatment consisted of active treatment of the prostate by massage and instillations, and immobilization of the lumbar spine. Good results occurred if the changes in the spine had not progressed to a high degree of destruction.

COMMENT

The most significant features of this study have been

1 The emphasis given to the part which circulatory changes and consequent nutritional changes play in the production of painful stiffening of the joints in which simple atrophy is the only evidence on roentgen-ray examination.

2 The importance of exhaustive physical examination in the search for infected foci.

3 The necessity of employing many forms of treatment, since no form was constantly successful and each kind of treatment was occasionally successful.

4 The importance of the last described group of male patients whose chief symptom is backache and who have spinal osteoarthritis, apparently associated with prostatic infection.

5 The lack of evidence that arthritis deformans is a focal infection.

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THE DIAGNOSIS OF CONDITIONS CAUSING BACKACHE

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Backache is one of the commonest of complaints. Etiologically considered, it is one of the most difficult to deal with. The sufferer often wanders from physician to physician, from urologist to gynecologist, from surgeon to orthopedist, from osteopath to chiropractor. Drugs of all descriptions, "patent" and legitimate, are taken, applications, operations, manipulations are resorted to without avail. Like a good old creditor, the backache stays with the patient sufferer.

It is true that a certain percentage of the afflicted are cured or relieved by medical or surgical intervention, that in other cases backache yields to the chiropractic touch or the magic influence of "science" of some kind. But is it not also a fact that many of these poor patients come again and again to the physician's office, only to be considered a nuisance by the one who is unable to help them, often through his own fault? And is it not true that in the field of industrial medicine, no other problem has resulted in more discredit to the profession than the failure in diagnosis and treatment of this condition? It is not willingness to help or sympathy which is lacking in the physician, but in no field of medicine is there greater ignorance as to cause and conditions, or more perfunctory practice regarding treatment than in dealing with the complaint commonly called backache.

Here, as in all other fields, it is only careful attention to little things and to petty complaints, scrutiny, observation and painstaking examination, which will save the reputation of legitimate medicine. Thorough knowledge and a broad conception of all the conditions that may bear on the question are the necessary requisites for any action. I take it for granted that the modern physician understands the practical mechanics of the spine, that he appreciates the importance of the lumbosacro-iliac junction as the supporting arch of the upper half of the body, and that he has at his command the aid of the modern laboratory and a skilled roentgenologist.

FACTS OF IMPORTANCE IN DIAGNOSIS

Since Lovett's¹ comprehensive article, the situation regarding backache has undergone some changes that are well worth noting. It is true the symptomatology has remained the same, the general classification—pelvic, traumatic, arthritic, static, sacro-iliac—still holds good. The "patent" medicine venter continues to reap his revenue and we are still, in many cases, "up against it," as far as diagnosis and treatment is concerned. But two facts stand out that the student cannot overlook.

1 Lovett states that backache is more common in women than in men. In his paper, he speaks occasionally

¹ Lovett, R. W. The Causes and Treatment of Chronic Backache. J. A. M. A. 42: 1615 (May 23) 1914.

of "her" when referring to the patient. From my own experience and the data available in the literature, it seems that there has been a shifting of sex incidence in backache coming under the observation of the orthopedic surgeon, with an apparent preponderance in men resulting. O'Ferrall,² in a clinical study of the cause of backache cites thirty-four cases in men to six in women (laborers). Kuth,³ among 208 cases, finds 136 in males and twelve in females (traumatic, seventy-five, nontraumatic, seventy-seven, and six after childbirth). In my experience I find one case of backache in women to approximately two in men. An explanation of this situation at first sight seems difficult. The most plausible reason is that backache in women most frequently is of pelvic etiology, and that women, becoming more and more acquainted with this fact, consult a gynecologist or general surgeon to begin with. On the other hand, the development of gynecologic diagnostic and therapeutic methods has resulted in women being subjected to corrective operative measures much more expeditiously than previously was the case, and thus in reducing the frequency of cases that in earlier days were not cured by "successful" operations. In other words, gynecology has become more popular and more efficient. But is backache from all other causes, extrinsic and intrinsic, more frequent in man than in woman? This rather interesting problem can be solved only by examination of a large, unselected material. An investigation of this sort will not only be interesting, but is also bound to be of great practical value, for it will throw light on a number of sanitary, social and economic conditions connected with causation and prevention.

2 The second fact may be summarized by the statement, based on observation during the last few years, that development and exploitation of modern diagnostic means and closer scrutiny of their revelations have resulted in the recognition of causes for backache which, up to the time of Lovett's writing, had appeared rather vague or were insufficiently known. I need refer only to the studies regarding osseous malformations, focal infections, and the like. On the other hand, close criticism of our findings has convinced us of the numerous shortcomings of our technical means of detection, e. g., comparison of roentgenograms with the actual pathologic condition.⁴ In this connection, much is open to further investigation.

NATURE OF EXAMINATION

The conclusion to be drawn is of paramount importance. Every patient coming to us for treatment for backache must be subjected to a most systematic and careful examination. This point cannot be emphasized too strongly. It is not sufficient to hear the patient's complaint, to apply a few palpatory or functional tests, and then dismiss him with a drug liniment or a pelvic "support." That is exactly what the quack is doing. By this method, symptoms are frequently relieved, but the cause, as a rule, persists. The patient drifts from bad to worse, and the physician brings condemnation not only on himself but what is infinitely worse, also on the whole profession. Superficiality and snapshot

sufferer in my experience not only by the general practitioner but also by many a busy orthopedic surgeon.

In order to avoid the numerous pitfalls it is indispensable to have the patient remove the clothing. A careful survey must be made both with the patient standing up and with him lying down. Close cooperation by the internist, gynecologist, urologist, orthopedist, roentgenologist and laboratory man is in many cases the only way to expeditiousness and success. A routine scheme as outlined below, will prove most useful and will result in a possible diagnosis by a process of elimination rather than by a process of election, which is only too liable to lead to a loss of time and to failure. It may seem far fetched, cumbersome and time consuming to launch on such a comprehensive scheme as the one proposed. My experience and failures have taught me that the procedure pays in the end, and that the investigation can be accomplished in a very short time, once the mind is trained to proceed in a systematic manner. Many authors who have carefully gone into this question are

CAUSES OF BACKACHE

Extrinsic (remote)				
Gynecologic	Genito-Urinary	General Abdomen	Nervous System	Constitutional
Displacement	Bladder	Constipation	Meninges	Diphtheria
Inflammation	Prostate	Inflammation	Medulla	Toxemia
Tumor	Seminal organs	(appendix etc.)	Peripheral nerves	Bacterial
Pregnancy	Uterus	Tumor		Alcohol
Coccygodynia	Kidneys	Visceroposis		Lead
Organic		Hernia		Neurathenia
Nervous		Hydrocele		Hysteria
		Varicocele		Endocrine
		Rectal disease		Myalgia

Intrinsic (direct)				
Congenital	Static	Traumatic	Inflammatory	Neoplastic
Irregular ossification	Large abdomen	Strain (sacro-iliac)	Syphilis	Sarcoma
Sacralization	Slumped attitude	Sprain	Pott disease	Carcinoma
Fifth lumbar	Curvature of spine	Dislocation	Sacroiliac tuberculois	
Defect Rib formations	Rachitis	Fracture	Infectious disease	
	Osteomalacia	Postoperative	Pneumonia	
	Scoliosis		Typhoid	
	Spondylolisthesis		Conorrhea	
	Tilting of pelvis due to		Actinomycosis	
	a Inflammation of lower		Osteomyelitis	
	b Paralysis of extremity		Spondylitis deformans	
	c Deformity		Neuritis (herpes zoster)	
	Weak foot		Neuroradiculitis	
	Contracted gastrocnemius			

supporting me in this plea for thoroughness and system. A careful anamnesis in the great majority of cases will immediately suggest a definite course. But we must always bear in mind that the case under observation may present a combination of any two or more causes, and that there is the possibility of referred symptoms. The accompanying tabulation adopted by me is self explanatory and is recommended to any one called on to solve a difficult problem of this sort.

Generally speaking, in examining patients suffering from backache I have found it most useful always to bear in mind three points: (1) that one must as Kidner⁵ puts it, so pointedly get rid of the old idea of the inherent stability and strength of the lower lumbar spine and the pelvic girdle and to look at it as a particularly unstable and complicated mechanism with

many and rather weak points", (2) that anatomy and function of the lumbosacro-iliac apparatus is by virtue of its connection and location especially liable to be secondarily affected by alterations of all structures surrounding and supporting it and supported by it, with the result of mechanical, inflammatory and productive changes, (3) that many cases are associated with neurasthenia and psychasthenia, which are liable to exaggerate or misrepresent local symptoms. It is therefore advisable to test possible hypersensitiveness of the patient by pressure on the styloid process. This "trick" has given me many times a pointer as to the evaluation of complaints.

ETIOLOGY

In reviewing the numerous possibilities in the etiology of backache, experience has shown me that there are five conditions which are quite frequently overlooked, because they and their connection with pain in the back are insufficiently known, or else the facts making the diagnosis are at times difficult to establish. These conditions are (a) of a genito-urinary nature (small concrements, chronic prostatitis), (b) toxemias (focal infection), (c) weak foot (flatfoot), (d) malformations (especially of the fifth lumbar vertebra), and (e) myalgia. As to their significance as regards the matter under discussion, there can be no doubt. They all occur in daily practice, and often do not present, especially in the beginning, any other symptom but backache.

(a) There is perfect agreement that the treatment of a patient who has a small stone in the ureter or a chronic prostatitis with measures to cure a local backache is inexcusable. It is true, the prostatitis may gradually get better or the stone may pass, and with it the backache may disappear in spite of the mistaken diagnosis and treatment. But where does such practice differ from that of the quack? An excellent means of avoiding this pitfall is a routine microscopic examination of the urine in every case of backache.

(b) The same principle holds true of the toxemias. In our age and generation, one would think that every physician would carefully examine each patient's teeth and throat, and that he would try to discover the focus in the pelvic organs before writing a prescription for a liniment or for acetylsalicylic acid. Still, our daily experience proves that such is not the case. I agree in every respect with Gardner,⁷ who emphasizes the fact that, in every case of suspected focal infection, "a full mouth examination not only is necessary, but is the patient's due," the dental report to be based on complete mouth roentgenograms and the clinical evidence. How many sufferers from backache could have been cured by this practice in the beginning of their troubles, while their treatment proves to be most difficult after secondary changes have firmly established themselves in the structures of the backs. In this connection, it is well to remember that syphilis is not always proved by a positive Wassermann reaction. I have seen a number of persons suspected of syphilis with a persistently negative Wassermann reaction, who responded quickly to treatment with yellow mercurous iodid.

(c) According to our experience, weak foot, especially in the beginning, is often associated with backache. A recent summary of the physical status of four million recruits for the late war shows that among individual defects flatfoot ranged far ahead of anything else (117 per cent), and as a cause for rejection, it

amounted to 36 per cent. Thus, flatfoot, and weak foot still more, are astonishingly frequent disorders. The cases in which persons having weak feet were treated for backache were numbered by the thousands. Once a physician has learned to regard the whole body as a static unit, the mechanics of a single part of which cannot be disturbed without bringing disarrangement and strain on more remote links of the chain, this situation will automatically be remedied. In the reconstruction camps of the U S Army during the war, an encouraging beginning was made in the systematic diagnosis and treatment of this condition, which no doubt will have its effects in emphasizing, in civil practice, the relation between weak feet and backache. Easy as the diagnosis of weak foot may appear, in this connection I wish to emphasize the fact that the functional test as generally carried out, with the patient balancing the weight on one foot, is ineffective and altogether misleading. To most persons, this position is an unnatural one, and therefore, in order to maintain it, they make unusual and incoordinate efforts, with the result of forced innervation of muscles which, under normal conditions of weight bearing, would remain more or less inactive. Thus, for instance, a weakened tibialis anticus, during an examination of this kind, may elevate a sagging longitudinal arch and lead to the assumption that the arch is really efficient, while, on ordinary walking and standing, it is not. This deception is preeminently liable to occur in incipient cases of weak foot. Boigey⁸ reports a similar observation on excessive weight bearing. In our case, we have, in addition to the heavier load, the effort of the patient to maintain balance. In testing for weak foot, it is therefore my procedure to let the patient throw his weight on only one foot, just as he would in the process of a slow walk, while the other foot remains on the ground and serves to maintain the balance of the body. This method gives a far clearer and more accurate picture of the existing weakness of a foot.

(d) Skilful modern roentgen-ray diagnosis has thrown considerable light on the backache due to abnormalities of the spine and sacrum. The frequency of these malformations is surprising. Baetjer and Waters⁹ report that, in 1,000 cases of examination of the lumbosacral region, there were 15 per cent of congenital nonunion of the sacral laminae. Rib formations in connection with the fifth lumbar vertebra are also an occasional occurrence. The most interesting abnormality in this region, also quite frequent, is the so-called sacralization of the fifth lumbar vertebra, of which Imbert¹⁰ differentiates three degrees, according to the greater or lesser size of the transverse process, and its more or less complete contact with the ilium or sacrum (sacralization or pseudosacralization). The authors⁹ mentioned say that "this abnormality generally gives symptoms." Considering that the fifth lumbar vertebra is the last link of a movable chain, and that it acts as a buffer between the spine and the pelvic girdle, and taking into account the intimate relation of this vertebra and the sacrum to many structures, it is not surprising that clinical diagnosis, together with roentgen-ray findings, has developed the interesting fact that congenital anomalies in this region predispose to injury, with resulting back symptoms. The understanding of Bertolotti's "painful sacralization" syndrome

⁸ Boigey M. Observations on the Various Modes of Locomotion of Man. *Presse med* 30 1461 (Sept 2) 1922.

⁹ Baetjer F H and Waters C A. Injuries and Diseases of the Bones and Joints. New York: Paul B Hoeber, 1921. pp 316-317.

¹⁰ Cottalorda M J. The Fifth Lumbar Vertebra, A Clinical and Roentgenologic Study. *Marseilles med* 59 382 (April 15) 1922.

⁷ Gardner B S. The Examination of Teeth in Group Medicine. *Minnesota Med* 5 356-359 (June) 1922.

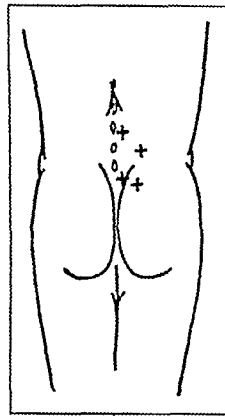
rests on the recognition of this important connection Leri,¹¹ however, says that even a pronounced degree of sacralization revealed by roentgenography is rarely the cause of pain. Albanese,¹² recently after drawing our attention to the fact that many of these cases are misdiagnosed and mistreated, points out that Bertolotti's syndrome always means sacralization, but that sacralization does not always mean Bertolotti's syndrome. This, in my experience, states the case correctly, and may be applied to any congenital malformation of this region in relation to injury. The term injury does not necessarily imply trauma of a serious character. The ordinary wear and tear or increased taxation of the abnormally developed bones, joints and ligaments is sufficient at times to invite the changes necessary for trouble in such a locus minoris resistentiae. The observations of other authors as reported in the recent literature confirm me in this statement.

O'Reilly,¹³ in two recent roentgen-ray studies, rightly emphasizes the importance of the relation between congenital malformation of the lumbosacral region and industrial accidents, injury, strain and backache. Approximately 50 per cent of persons showing abnormalities of this region have not, and probably never will have, back symptoms if there is no additional strain or trauma, but observations seem to point to the fact that they have a potentially weak spine, predisposing to strain and subsequent backache. Sooner or later, this fact will have to be considered in the examination of prospective laborers, and in the evaluation of industrial accidents and determination of compensation connected with them. On the other hand, the roentgen-ray finding of a congenital abnormality must in case of backache, lead us to assume that the cause of the pain is located in the lumbosacro-iliac apparatus, even if the roentgen ray does not show anything else, provided we can definitely exclude all other causes. In other words, I am joining

poor circulation, chlorotics, lymphatics, spasmophiles, (2) the hereditary adipose type diabetics, those suffering from hypophyseal adiposity, adiposis dolorosa-purpura, (3) individuals showing the uric acid diathesis. These three types of patients, under the influence of daily life, changes of temperature and barometric pressure, overfatigue, overstrain or exposure of any kind, are liable to develop myalgias.

For the diagnosis of these myalgias, it is of paramount importance to know where to look for their source, and to palpate the muscle in the suspected area in order to discover the small circumscribed hardenings (often the size of a pit of a date) that are the cause of the trouble. Next to myalgias in the shoulder and elbow region (brachialgia), the myalgia in the lumbosacral region (the lumbago proper) is the most common manifestation of this disease. The seat of the pathologic condition in such a case is generally to be found in the lower end of the erector trunci muscle, and especially deeply situated in the angle formed by the iliac bone and the lowest part of the lumbar spine. In quite a number of cases of so-called sprain of the lumbosacral ligaments, strain due to fatigue and weakness,

or occupational and postural strain, I have been able to demonstrate the myalgic nodules deep in the lumbosacro-iliac angle. At times, the lesion may be found a little higher up on the outer or inner side of the long back muscles and in the posterior superior part of the gluteus maximus. Men and women are similarly affected but in every case we have to deal with people of poor muscular development. The diagnosis rests on the type of patient affected, the demonstration of the nodulation in the muscles, always painful on a fully increased pressure and often in presence of a more or less hyperesthetic area of skin directly over the affected muscle area. Often one may elicit a history of, or may discover myalgia in other parts of the body at the same time.



Seat of predilection of
lumbosacro-iliac myalgia

not superior, importance But above all there must be assured the protection of a definite diagnosis

CONCLUSIONS

- 1 The essentials for an etiologic diagnosis in cases of backache are system and thoroughness in examination
- 2 The search for remote causes and for those of local character is of equal if not greater importance
- 3 Congenital anomalies of the lumbosacral region predispose to injury, with subsequent backache
- 4 Lumbago proper or lumbosacro-iliac myalgia is one of the most frequent and least recognized conditions
- 5 In every difficult case, the establishment of a diagnosis depends on close cooperation of the various diagnostic branches of medicine

BLOOD TRANSFUSION BY THE CITRATE METHOD IN HEMORRHAGES OF THE NEW-BORN *

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The use of whole blood injections is a well recognized clinical procedure in cases of hemorrhage occurring in new-born babies. Several methods have been devised for this procedure, all of which have certain features to recommend them. The simplest method is the use of subcutaneous or intramuscular injections, from 10 to 20 c.c. being employed at a time. These are often repeated two or three times in a given case, if the primary injection is not successful in arresting the hemorrhage. This is a perfectly safe method, and can be carried out under any circumstances by a physician of ordinary skill. The objection to its routine use is that frequently cases fail to respond favorably, moreover, such injections are frequently painful and irritating to the recipient.

A second method is the direct transfusion through anastomosis of veins by means of cannulas, the median basilic vein of the donor being united to the external jugular of the baby. This method is good, but is rather cumbersome. It requires the use of trained assistants, and not a little skill in blood vessel surgery for its successful accomplishment. The amount of blood transferred is not accurately measured, but must be judged by the change in color of the baby and thus approximated. It has the advantage that nothing but blood is injected, which avoids all possible danger of toxic reaction due to anticoagulants.

A third method is the injection into the longitudinal sinus by means of syringe or buret of whole blood, either with or without the addition of citrate to prevent clotting.

This method is used especially by pediatricians, and in the hands of one doing this kind of work is doubtless very satisfactory. For the general practitioner, however, the procedure is considered too formidable unless he has had some special training along these lines. The objection advanced is that one cannot be sure that the needle is in the lumen of the sinus throughout the injection, even if it is there when the injection is begun. I have seen one case at necropsy,

after injection by a man who claimed that he had had considerable experience in the use of this method. A large hematoma was found under the dura. The needle had evidently penetrated the side wall of the sinus after the injection was begun. Numerous other reports of similar accidents are on record.

Fourthly, various substances other than whole blood have been used in this type of case, with indifferent results: horse serum, blood coagulants and human serum, either of the father or the mother of the child or of some person not a blood relative. The general experience has been that they work very well in the mild cases, but frequently fail in the severe form of the disease.

It would seem, therefore, that the use of whole blood in these cases is the only reliable way to stop the bleeding. If this could be done in a simple and safe method that is not too complicated for the average surgeon, a marked advance would be made in the treatment of these cases. It was in the hope of developing such a method that I undertook this piece of investigation.

It seemed reasonable that, if the peripheral veins were not too small, their use would be advisable, because any one familiar with the procedure in adults would be better able to acquire the technic in babies. In discussing the question with the pediatricians, however, I was told that the peripheral veins were too small, and that the method was impracticable. The same opinion was advanced by the men doing the direct transfusion. However, the dissection of a number of veins in bodies that I saw postmortem proved beyond a doubt that

INSTRUMENTS

Two pairs of fine rat tooth tissue forceps	One buret
Two pairs of mosquito artery forceps	One rubber catheter, 18 inches, as connection
One pair of iridectomy scissors	One constrictor for donor's arm
One scalpel	One small syringe for injecting procain
One large bore bleeding needle	One skin needle and horsehair
One pair of ordinary scissors	Ten c.c. of a 2 per cent solution of sodium citrate
One Luer needle No. 19	One tube of No. 0 catgut
One 4 ounce glass graduate and stirring rod	Special board to hold baby

these veins could be used if the proper instruments and technic were employed. Losee¹ mentions this fact in an article on the use of blood transfusion in cases of severe hemorrhages in infants. He does not describe his technic. Bamberger² describes a case in which he successfully used the median basilic vein.

The median basilic vein was first selected as most accessible and presumably the most satisfactory. After it had been used on several occasions, however, it proved to be so small that a very fine needle had to be used to insert into the vein. This resulted in a very slow flow of blood, when the gravity method was used, making the procedure very tedious and sometimes resulting in coagulation of the blood before the completion of the operation. These difficulties were especially seen in premature infants.

The external jugular vein was therefore selected because of its size, and also because of its accessibility. It is located just under the platysma muscle, and can be easily exposed by a small incision through the skin and muscle. It can readily be seen when the baby cries. The femoral or long saphenous vein has been

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1 Losee, J. R. Bull. Lying In Hosp. New York 12: 100 (July) 1922.
2 Bamberger, A. Illinois M. J. 39: 27 (Jan.) 1921.

mentioned in this connection, but was not used in this series because of the inevitable soiling of the wound postoperatively by urine and feces.

The citrate method was selected because of its simplicity, and because probably more men are familiar with its use than with other methods. There is very little, if any, danger of a toxic reaction from the small amount of the drug used in a single injection.

TECHNIC

Since the object of this work was to develop a method that would be practicable under almost any circumstances for men of average skill, the equipment has been made as simple as possible for efficient work. Only a few instruments are necessary, but they must be good and of the right kind.

For the special holding board an inch board about 20 by 10 inches is used as a base. Across this, about 4 inches from one end is set another piece of inch board 2 inches high, called the neck board. A series of $\frac{1}{2}$ inch holes are drilled in the base board about 2 inches from the edges and about 1 inch apart, through which bandages tied to the baby's ankles and wrists can be passed. The baby is thus secured to the board.

The baby is placed back down on the board so that the neck board comes under the back of its neck, and the hands and ankles are secured as mentioned above.

The head is then held rotated to one side by a nurse or assistant. This exposes the region of the opposite external jugular vein. In cases in which transfusion is indicated, the condition of the baby is such that it offers, in most cases, little resistance or objection to being placed on the board.

It is advisable to have a long narrow bore glass tube as a buret, and we find that the glass portion of the Asepto irrigating syringe works very well. We have also used the barrel of an ordinary 20 c.c. Luer syringe for this purpose. The object of having the buret long and slender is to facilitate observation of the rate of injection since the flow of blood through the fine needle is necessarily slow.

The needle used must not be sharp pointed because of the tendency to cut and tear the wall of the vein. For this reason the ordinary Luer needle is made blunt by grinding the point down with an emery wheel.

Before the operation begins it is well to have everything in shape to complete it without delay. The importance of this point is that if there are delays a certain amount of clotting is liable to occur, which interferes with the flow of blood through the small needles that it is necessary to use in this work.

The donor's arm is prepared for venipuncture in the usual way and is painted with iodine. A 12 inch No. 0 catgut ligature is doubled and the ends are grasped by mosquito forceps. The skin over the external jugular is painted with iodine followed by alcohol and the region of the vein injected with a small amount of procaine or apothusin 1 per cent solution. The vein can be readily seen in most cases, especially when the baby cries.

A few minutes are allowed for the anesthetic to take effect and then a small incision is made about an inch in length along the course of the vein through the skin and platysma muscle. In infants that have had a severe hemorrhage the vein may be hard to find owing to the collapsed condition. The baby will usually cry, however, and this will give the needed distention. After exposure the vein is grasped very gently with fine artery forceps and carefully cleaned of perivascular connective tissue. The importance of this point is that the vein cannot be properly opened nor the needle easily inserted unless the vein wall is quite free. The vein is next lifted up and the double ligature passed underneath. This is sometimes facilitated by passing a grooved director before passing the ligature. The loop in the catgut is then cut giving two ligatures under the vein. The ends of each ligature are caught in mosquito forceps. One ligature is drawn upward and the other downward so that the segment of the vein that is to be opened is raised clear of the wound and all

circulation in it is stopped. At this point the vein is dropped back into the wound and a pad soaked with salt solution is placed over the incision to prevent drying.

The blood is now obtained from the donor in the usual way, a large bleeding needle being used with a 6 inch rubber tubing attached into the 4 ounce graduate containing 10 c.c. of a 2 per cent solution of sodium citrate. The blood is constantly stirred during collection and until it is ready to be poured into the buret thus insuring thorough mixture with the citrate solution. In donors with fine veins or in subjects in whom the arm is very fat conditions frequently encountered in women the vein is transfixed by a fine cambric needle to prevent rolling when the puncture is made.

After the collection of the blood the salt solution pad is removed from the baby's neck and the segment of the vein between the ligatures is raised clear of the wound. The vein is next incised half way through its diameter with the fine iridectomy scissors. Ten cubic centimeters of physiologic sodium chlorid solution is placed in the buret which is connected to the No. 19 Luer needle by an 18 inch rubber tubing about the size of the ordinary rubber catheter. This needle must have a blunt point which prevents injury to the vein wall during the insertion. When it is seen that the salt solution is flowing freely through the needle the opened segment of the vein is lifted up, and a stream of salt solution from the needle is directed at the hole in the vein. This dilates the hole and materially aids in the introduction of the needle into the vein. The proximal ligature is slightly relaxed as the needle enters the vein and then drawn taut after the insertion of the needle. The needle is thus held in place.

The salt solution is allowed to flow into the vein when it is seen that a good flow is established the citrated blood is poured into the buret by the assistant and the buret kept filled until all of the blood has been injected. The last of the blood is followed by a few cubic centimeters of salt solution. The needle is then withdrawn and the vein is tied off above and below the opening with the tension ligatures mentioned above.

The wound is closed by one catgut ligature in the platysma and a subcuticular horseshair suture in the skin. It is dressed with a dry dressing which may be changed to a hot boracic compress if infection occur as happened in one of these cases. If everything works smoothly the transfer can be effected in about fifteen minutes from the time the collection of the blood begins.

The donor in these cases may be the mother, the father or even some persons not a blood relative of the baby. There is no necessity to group the blood of the donor or recipient as it has been shown that the hemagglutinins and precipitins are not developed in the child to any great extent until it is about 2 years old. It was found in this series that sometimes the blood of one donor was more effective in controlling the hemorrhage than that of another. Blood from the mother frequently seemed to be better than that from the father.

There does not seem to be any danger of overloading the heart in giving the blood in this way as the flow into the vein is very slow and in none of the babies was there any evidence of respiratory or circulatory embarrassment. Many of the babies had an elevation of temperature of a few degrees for a few hours but seemed to be otherwise none the worse for the operation.

RESULTS

In all there were fourteen cases in this series. The seriousness of the hemorrhage varied from a slight capillary oozing from a mucous membrane to a severe anemia which resulted from extensive bleeding from the cord or from a melanoma. In many of the cases various remedies had been tried before transfusion was undertaken such as retreating and sewing the umbilicus in cord hemorrhages, or the giving of various other

forms of coagulant, such as blood coagulants, horse serum, or human serum under the skin. These measures had failed to produce the desired effect, and so transfusion was resorted to. The operation was followed by recovery in all cases, but in a few it was necessary to repeat the transfusion.

In one case a baby was suffering from a severe icterus neonatorum, and the jaundice persisted for several days after the hemorrhage was controlled. This is suggestive of the possible value of this procedure in severe cases of this kind unaccompanied by actual hemorrhage.

Clinically, striking improvement is shown by these babies after they had received from 75 to 100 c c of blood. The color is better, the bleeding usually stops in a few minutes, and the child is very much more active. It can be put to the breast in a short time, and is usually vigorous enough to take its feeding. If it is very weak from blood loss, it is probably better to feed it breast milk from a bottle for some time until it regains some of its strength, and is free from the danger of recurrence of the hemorrhage. If recurrence does occur, it may be necessary to repeat the process. In this case, if one external jugular has been used, it is probably better to use the median basilic vein, if it is not too small.

This, however, is not always necessary, as in one case I transfused a baby that had had a previous transfusion of defibrinated blood into the external jugular. This child started to bleed again on the second day, and I attempted to use the opposite external jugular for a second transfusion. As a result of defective apparatus, the blood clotted while we were getting it into the vein, and we were forced to tie off that vein. We then tried the arm vein, but it was too small, and broke while we were inserting the needle. I therefore reopened the wound I had made in the neck and dissected out the internal jugular vein, passed ligatures in the usual way, injected the blood, and tied off that vein. This left the baby with both external jugular veins and one internal jugular vein tied off, but, as far as could be seen, it did not affect the circulation of the head in the least, and the baby made an uneventful recovery.

One point that might be mentioned that we have learned from these experiments is that in using blood from the mother it is better to allow a slight excess of citrate solution, as it would appear that more is necessary to prevent coagulation in mother's blood than in blood taken from the father. This clinical fact is in line with some results that I have obtained in the study of the coagulation time of the blood in puerperal women.

These hemorrhages occurred from the first to the fourteenth day of life, and are more common about the fourth to the seventh day. In the melena cases there may be no evidence of bleeding for some time, except the pallor and weakness of the baby, until a large, black stool with or without fresh blood reveals the diagnosis.

Bleeding from the cord or from a circumcision is usually detected early, but much valuable time is frequently lost trying ineffectual methods to control it, such as retying the cord, putting in extra stitches, or the use of styptic applications locally. These hemorrhages are chemical in origin, and cannot be controlled by mechanical means. The only sure way of controlling them is by the administration of whole blood, and the best way of accomplishing this is by the intravenous blood transfusion of citrated blood.

It is not known just what happens in the blood of new-born babies that results in the failure of the normal mechanism of coagulation to function. Rodda³ has shown that there is a decrease in the coagulability, beginning with the second day and reaching its lowest point about the fourth or fifth day. The coagulability returns to normal in most cases about the eighth to the tenth day, and the bleeding time as well as the coagulation time may be prolonged in babies apparently otherwise normal.

It would seem possible or even probable that this phenomenon is intimately related, either as a result of, or as part of, the process of icterus neonatorum. This process occurs, and disappears in about 50 per cent of cases at the same time as the decrease in the coagulability is manifest, and its cause has never been satisfactorily explained.

It is obvious that something is lacking in the blood of these infants which is essential to normal blood coagulation and which predisposes to these hemorrhages. Whatever this substance or these substances are, they are present in excess in normal adult blood and are not dependent on the calcium content of the donor's blood, for in these experiments the injected blood contained its calcium supposedly in the form of the insoluble calcium citrate. It is more likely, therefore, that some of the other constituents of the blood entering into the coagulation are deficient, such as the thrombokinase or prothrombin, or that some substance in the blood, such as bile, interferes with the normal activity of the coagulation ferments.

CONCLUSIONS

1 Blood transfusion by the citrate method is a specific for the treatment of the hemorrhages of the new-born.

2 Peripheral veins, and especially the external jugular veins, are well adapted for this procedure if the proper instruments and technic are applied.

3 This method is safer than the injection of blood into the longitudinal sinus, and is not too technically difficult for the average physician.

4 The recovery of a patient with severe icterus neonatorum suggests the use of this procedure in this condition.

³ Rodda, F. C. Determining Coagulation Time of Blood in New Born. *Am. J. Dis. Child.* 19: 268 (April) 1920.

Cowpox in 1796—In the month of May, 1796, the cowpox broke out at Mr. Baker's, a farmer who lives near this place. The disease was communicated by means of a cow which was purchased in an infected state at a neighboring fair, and not one of the farmer's cows, consisting of thirty, which was at that time milked escaped the contagion. The family consisted of a man, servant, two dairy maids and a servant boy, who, with the farmer himself, were twice a day employed in milking the cattle. The whole of this family except Sarah Wynne, one of the dairy maids, had gone through the smallpox. The consequence was that the farmer and the servant boy escaped the infection of the cowpox entirely, and the servant man and one of the maids had each of them nothing more than a sore on one of their fingers, which did not produce the least disorder in the system. But the other dairy maid, Sarah Wynne, who never had the smallpox, did not escape in this easy manner. She caught the complaint from the cows and was effected with it in so violent a degree that she was incapable of doing any work for the space of ten days.—Edward Jenner. *An Inquiry into the Causes and Effects of the Variolae Vaccinae, a Disease Discovered in Some of the Western Counties of England, particularly Gloucestershire, and Known by the name of the Cowpox (1798)*.

CHANGES IN THE TEMPORAL BONES
IN EXPERIMENTAL RICKETS

THEIR RELATION TO OTOSCLEROSIS*

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AND

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In a previous report by one of us,¹ attention was called to the possible relation of otosclerosis to rickets or to the deficiency disease of which rickets is a common manifestation. The purpose of this second report is twofold: (1) to determine the pathologic changes within the temporal bone, particularly in parts most intimately associated with the function of hearing, in experimentally produced conditions having a fundamental resemblance to rickets, and (2) to establish an analogy between these changes and those found in that important and prevalent progressive type of deafness named "otosclerosis," thus attempting to offer experimental evidence as to its cause, i. e., that it is a manifestation of a deficiency disease.

Until 1902, Moos and Steinbrügge, according to Politzer,² were the only two who had minutely investigated the changes in the labyrinth of rickets. Necropsy of a dumb idiot, deaf since birth, who had general hyperostosis of the cranium, disclosed these changes: hyperostoses on the inner tympanic wall, great constriction of the internal auditory canal, ossification of the ligamentum annulare, and a mass of tissue consisting of cartilage cells and fibrous plugs, with a small calcareous deposit, in the capsule of the right cochlea near the recessus hemisphericus. In addition, in the left ear the foot-plate of the stapes was replaced by a bony mass which extended into the osseous substance of the labyrinth capsule. In the right ear, instead of the crura of the stapes, slipper shaped bands were seen, which were ossified only at their external periphery, and between which connective tissue rich in cells was deposited. Since that time, few investigators have called attention to changes in the temporal bone in rickets.

Mayer³ finds bony degeneration in the cartilage about the oval window, together with the same changes of ossification about the "joint" around the oval win-

dow. Mayer studied the changes in the temporal bone in a 9 months old child with well advanced rickets.

The marrow, blood spaces and adjacent layers of bone stained bright red in the hematoxylin-eosin-stained preparation, and in these red parts appeared very broad osteoid formations (bonelike tissue with deficiency of lime salts) which were sharply differentiated from the deep blue underlying bone. The marrow was distinctly fibrous, and evident spindle-shaped cells and collagen fibrils formed a widely reticulated network in which numerous osteoblasts were seen. Another significant finding was the remains of premature cartilage in the region of the oval window which was not ossified in the typical manner, but absorbed by the ingrowth of giant cells.

Mayer quotes Pommer and Schmorl, who likewise showed that the newly formed bony tissue remains uncalcified and covered with osteoblasts.

Ziegler, according to Mayer, also called attention to the changes in the temporal bone in rickets and to the fibrous nature of the bone marrow, an "endostitis,"

in which the newly formed network of bone remained uncalcified and in which the defect was lack of calcification rather than in the formation of cells.

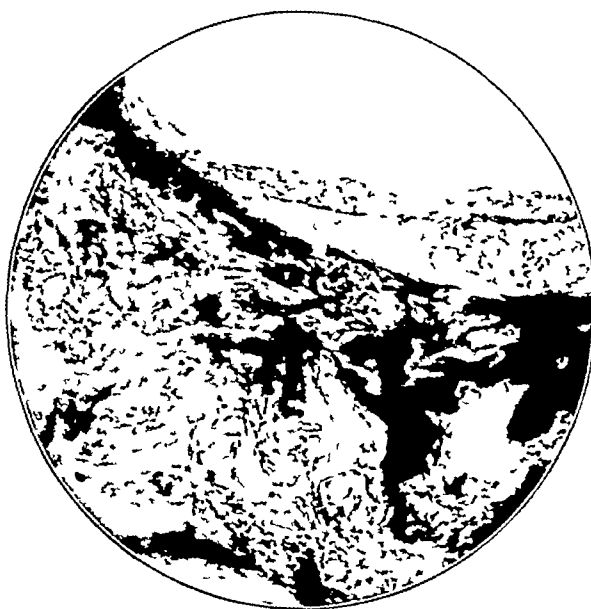


Fig. 1—Labyrinthine capsule osteoid tissue bone only partly calcified and wide cellular canals slightly reduced from a photomicrograph of 160 diameters magnification.

INTERNAL EAR IN EXPERIMENTAL RICKETS

The experimental work was carried out on young white rats in the manner now widely used in studying the biologic effects of deficient diets on these animals. Each litter of young was divided, part serving as controls and part being subjected to the experimental diet. For one series of animals, the diet was low only in fat-soluble A, for another series, it was low in both vitamin and calcium. We had for study, therefore, material coming from three groups of rats: (1) the normal controls, (2)

rats on a diet deficient only in fat-soluble vitamin, and (3) rats on a diet deficient in both fat-soluble vitamin and calcium. The basal diet was composed of casein, 18 per cent, dextrin 72 per cent, salt, 4 per cent, and yeast, 6 per cent. This diet, when fat-soluble vitamin was administered in the form of 2 or 3 drops of cod liver oil daily to each control animal, was found to be adequate to bring about normal growth and development. When the fat-soluble A was absent, growth and increase in weight were retarded in the characteristic manner, and xerophthalmia developed. If calcium also was omitted, bone changes became marked.

Technic.—At the end of the experimental period, which had been continued for three months, the rats were killed with chloroform. The long bones were removed and fixed in 10 per cent dilution of liquor formaldehydi for microscopic study. The heads were removed, the skin, soft parts and lower jaws dissected away, the top of the skull and brain removed and the rest of the head fixed in the 10 per cent liquor

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¹ Kauffman A. B. Deficiency Diseases of the Ear, Nose and Throat 1, Otosclerosis 2 Hyperplastic Ethmoiditis. Laryngoscope 32: 50 (Jan.) 1922.

² Politzer A. Diseases of the Ear. Philadelphia: Lea Bros. & Febigar 1903.

³ Mayer O. Untersuchungen über die Otosklerose. Leipzig: Alfred Holder 1917.

formaldehyd. After fixation, the bones were decalcified in 5 per cent nitric acid in the 10 per cent liquor formaldehyd, washed in water, dehydrated in alcohol, and embedded in celloidin. The base of each skull was cut into transverse serial sections, each tenth section being stained and mounted. Mayer's acid hemalum and aqueous eosin were used as routine stains.

In the decalcification of the bones, differences in calcium content were already evident in the different series of rats. The bones of those animals which had been maintained on a diet low in both fat-soluble A and calcium were completely decalcified within a very short while, six hours usually being sufficient. The bones from rats which had been maintained on a diet low only in fat-soluble vitamin required longer action of the decalcifying fluid, usually over night, whereas the normal controls required a still more protracted action of the decalcifying agent.

In the microscopic examination the attempt was made to compare similar regions and levels of the auditory apparatus in the three series of rats. In each series the foot-plate of the stapes formed the most convenient landmark for orientation.

Normal Rats—In the series of normal controls there were no bony abnormalities to describe. The external auditory canals of some of the animals of this series contained dense collections of polymorphonuclear leukocytes, without, however, any evidences of involvement of the middle ear or of the bones surrounding the middle and internal ear. A similar condition was also present with about equal frequency in the animals of the two experimental series.

Rats on Low Vitamin and Low Calcium Diet—

The changes noted in the animals of the series on a diet low in both vitamin and calcium are described first because they were most marked and most widespread. Throughout all the bones of the base of the skull there are present the evidences of disturbed bone formation which have been described so completely for the long bones by others in experimental rickets of rats (Fig 1). Completely calcified bone is small in amount. The greater portion of the bone is composed of uncalcified osteoid tissue, which has, in general, the normal trabeculated arrangement, but the trabeculae are somewhat thicker than those of the normal bone of the control series. The osteoid tissue has a faintly fibrillated appearance, and its nuclei are larger and richer in fluid than those of the normal bone. Where bone marrow is present, it is hyperplastic, cellular, free of fat, and usually rich in red blood corpuscles, moderate numbers of myeloplaxes are present in the marrow. Cartilage is absent, except about the annular ligament of the foot-plate of the stapes and in the ventral portions of

the occipital and sphenoid bones, the cartilage about the annular ligament shows certain changes to be described later. The haversian canals are wide, and are filled with a tissue rich in young, spindle connective tissue cells, which surround a dilated, thin walled, engorged blood vessel in each canal. Osteoclasts are not seen in any of the sections. In one animal of this series, osteoblasts are numerous, forming a distinct layer on the surface of the osteoid trabeculae, in other animals of the series they are present in fewer numbers.

Osseous Changes In and About the Auditory Apparatus—The changes described above as present diffusely in the bones of the base of the skull are as marked in the petrous portion of the temporal bone as elsewhere. The labyrinthine capsule in one animal is readily distinguished from the surrounding bone by its thinner, denser lamellae of osteoid tissue, by the absence of marrow and by the less numerous canals. The capsule contains more calcium than the surrounding bone, but, like the latter is incompletely calcified. In the other

rats of this series the bone immediately about the cochlea and labyrinth (Fig 1) cannot be distinguished from that farther away, the entire petrous bone being soft and spongy, with numerous wide, cellular, vascularized spaces.

The stapes, just above its foot-plate, contains in every specimen a central area of cellular tissue (Fig 2). The foot-plate has a somewhat greater degree of curvature than in the normal animals. In one the bending is quite marked, the foot-plate bulging into the cisterna perilymphatica vestibuli (Fig 3). In another animal two slight projections extend into the vestibular cavity from the margins of the foot-plate, the middle portion of the plate being bowed outward into the middle ear cavity (Fig 4). This condition is suggestive of hyperostosis, but

has probably been brought about by the outward bending of the central part of the foot-plate.

The cartilage of the oval window on both sides of the annular ligament is definitely abnormal (Figs 2 and 4). The cartilaginous zone is increased in width, and its margin next to the bone is irregular. The cartilage cells are less regularly arranged than normal, and those nearest the annular ligament appear younger than the rest of the cells in that the nuclei are larger and less condensed. Capsules enclosing two cells each are more numerous than in the controls. Irregular calcification of the cartilage, especially of the petrous side, is apparent, deeply blue stained projections of cartilaginous matrix may extend almost to the free margin of the annular ligament (Fig 2). At the anterior margin of the oval window the changes in the cartilage have led to almost complete disappearance of the annular ligament (Figs 2, 3 and 4). The latter,

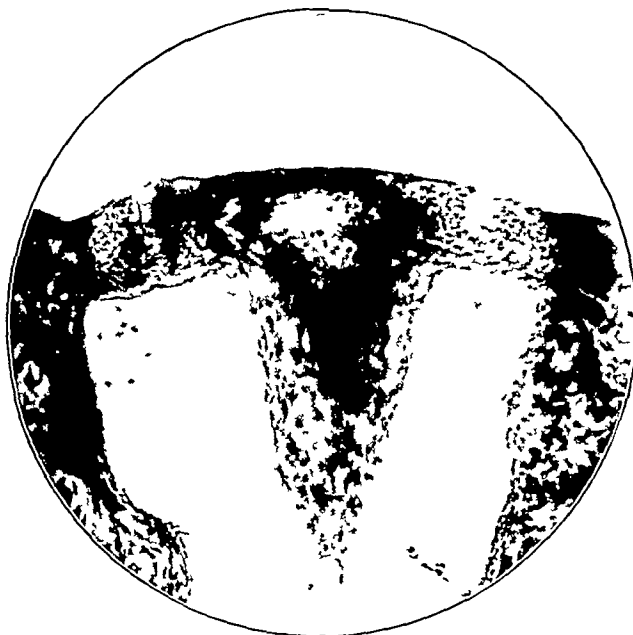


Fig 2—Foot plate of the stapes with a central cellular area. The annular ligament on the right, which is the anterior margin of the oval window is indistinct and the line of calcification is irregular on the left an area of calcified cartilage extends almost to the annular ligament slightly reduced from a photomicrograph of 160 diameters magnification.

instead of being a very sharply defined band of transversely fibrillated tissue between two zones of cartilage, is indistinct, being represented by only a few fibrils, which run from the marginal cartilage to that of the stapedial foot-plate. The free margins of the two cartilaginous zones are very indefinite and irregular, and in places the two zones appear to be fused and to replace the annular ligament completely as the result of proliferation of cartilage cells (Fig 5). The changes in and about the annular ligament and the foot-plate are present in all the animals of the low calcium series, five in number, which were subjected to detailed microscopic study. In all the animals the changes in the osseous tissue are marked and widespread. It is not possible to detect any greater proneness to involvement on the part of any particular portion of the bony auditory apparatus, but the cartilage of the anterior margin of the oval window is uniformly more severely involved than that of the posterior margin.

Changes in the Auditory Soft Tissues In the normal animals the labyrinth is lined by a fairly thick layer of tissue which has the structure of neuroglia or neuro-epithelium. This is composed of rather widely separated, faintly outlined cell bodies, each with a small, round, deeply stained nucleus about the size of that of a lymphocyte. These cells lie in a very finely fibrillated ground-substance, the fibrils interlacing with one another in all directions. The layer of lining cellular tissue is traversed by a few widely separated capillaries. In the animals of the low calcium series, the layer of tissue which lines the labyrinth is of normal thickness, but contains a larger number of young spindle nuclei (Fig 1). The latter are usually most numerous nearest the bony wall or about the walls of the capillaries, the cells to which these nuclei belong appear to have been derived from the small amount of stroma which normally supports the capillaries. The ground-substance of the lining tissue appears more coarsely fibrillated, somewhat denser, and slightly more deeply stained than in the normal animals. The cochlear nerve contains a few small round cells with deeply stained nuclei, apparently lymphocytes. In the spiral ganglion, young spindle nuclei are slightly increased in number in one specimen. In general, it may be said that changes in the auditory nervous tissues are slight, such as are noted appear to be secondary to the nutritional disturbance of the more markedly involved bone or to the abnormal general metabolism.

Animals on a Diet Low in Fat-Soluble Vitamin Only—In the animals which were kept on a ration low only in fat-soluble A, osseous changes, both immediately about the auditory apparatus and at a distance from the latter, are much less marked than the changes which have been described above. The bone is composed of

dense, hyaline, deeply eosin-stained, fibrillated trabeculae which are usually centrally calcified. The haversian canals contain only small amounts of cellular tissue, the marrow present is moderately cellular. In this series of animals the structure of the bone approaches very closely that of the normal controls. The animals of this series used for microscopic study had been treated with cod liver oil and had recovered from their xerophthalmia and retarded gain in weight. The slighter degree of involvement in this series, as compared with the low calcium series, might be considered evidence of recovery from osseous disturbances under the influence of cod liver oil. We do not believe, however, that the bones were ever so severely or so diffusely involved in the animals which had been on a diet low only in fat-soluble vitamin as in those which had been subjected also to a low calcium ration.

The changes noted in the bones of the base of the skull in the two experimental series of rats can be closely correlated with those present in the long bones.

In the animals which had been maintained on a diet low in both calcium and vitamin, the long bones give evidence of disturbed calcification as marked as that present in the bones of the skull. An excessive amount of osteoid tissue is present, calcification is deficient, the line of cartilage between diaphysis and epiphysis is irregular and partly calcified, and the bone marrow is hyperplastic and cellular. In the series whose food was deficient only in fat-soluble vitamin, changes are much less marked, and the long bones approach the normal in structure.

Clinical Application—It is seen, therefore, that in rats fed on diets low in content of fat-soluble A and calcium, there were produced pathologic conditions in the temporal



Fig 3—Footplate of the stapes bent inward into the vestibular cavity. The annular ligament at the right (anterior margin of the oval window) is indistinct. Slightly reduced from a photomicrograph of 160 diameters magnification.

bone having a fundamental resemblance to the other bony skeletal changes in rickets. These changes, definite and well marked, are present in structures vital for perfect hearing. The bowing of the foot-plate of the stapes (suggestive of the yielding of soft bone to external pressure), the proliferative changes in the region of the anterior margin of the oval window, the involvement of the annular ligament, that may, in the process of healing, go on to at least partial ankylosis, the replacement of the normal, dense, nonvascular bone of the labyrinth capsule and coils of the cochlea by vascular spongy bone, the proliferative changes in the auditory nervous tissues—these alterations are certainly sufficient to warrant the assumption that corresponding changes even less marked in the human being would produce impairment of hearing to a varying degree. It is interesting here to ask whether the change in the position of the head, observed in some of the animals fed on these deficient diets, may not have been due to labyrinthine involvement.

We feel justified, therefore, in calling attention to several points hitherto unrecognized both by pediatricians and workers in the problem of rickets, and also by the otologist that changes in the temporal bone in rickets are important ones since they are concerned with structures essential to the function of hearing, and, secondly, that with such changes there may be a type of deafness either initiated very early in life or remaining latent until the healing process is complete, that has for its etiologic basis dietary deficiencies. This may help to throw some light on the vast number of impaired hearing cases found in children and not ascribable in their entirety to any of the entities in the present-day classification of deafness.

OTOSCLEROSIS A DEFICIENCY DISEASE

Attention was called by one of us¹ to the possibility that otosclerosis is a deficiency disease, that it is a nutritional disorder having for its most important etiologic factor a vitamin deficiency of fat-soluble A, so that it was termed at that time a latent "adult rickets." There is scarcely any chronic disease which shows more quantitative variations than rickets, changes from a clear-cut disorder going down to a vanishing point which needs the greatest care in order to establish its existence. Further to establish this assumption, we shall make an effort to show that the experimentally produced pathologic changes in the internal ear of rats, following dietary deficiencies, can rightfully be considered precursors of the clinical and pathologic entity known as otosclerosis.

The term "otosclerosis" has been accepted by otologists since the work of Politzer,² in 1893, as indicating a definite entity. It has been applied to that group of cases showing a chronic progressive deafness (usually associated with tinnitus aurium) in which, independently of intercurrent disease of the tympanum, the bony capsule surrounding the labyrinth is the seat of a chronic nonsuppurative disease. Although von Trötsch³ was the first to suggest, on the basis of clinical observations, that this condition be given a separate place in the category of diseases of the ear, it was Politzer who clearly defined the condition, introduced the term, and demonstrated its character by microscopic study as a primary pathologic change of the capsule of the labyrinth. Many observers attempted to show an analogy between this condition and other pathologic states in which other bones of the body were affected, particularly rickets, osteomalacia and arthritis. Beck⁴ in 1915, first called attention to the

fact that in otosclerosis there is evidence of calcium deficiency in the rest of the bones of the body, especially in the larger and long bones, as determined by roentgenograms. Politzer believed that the form of progressive deafness which runs its course from the very beginning without any catarrhal symptoms must be regarded as a special disease of the organ of hearing. Unfortunately, however, to this time we are no nearer to knowledge of its cause than we were when Politzer, Siebenmann, Katz, Habermann and other European otologists first called our attention to the condition, and as a result, there has been offered no form of treatment of benefit to this prevalent malady, which constitutes more than 7 per cent of all ear cases.⁶

Pathology—Most authors are agreed as to the pathologic change itself. This knowledge has been gained by the microscopic examination of such specimens as have been available. There is osteoporosis of the bone of the labyrinth, in consequence of which the dense petrous bone is replaced in certain areas by vascular, spongy

bone, especially in the region of the anterior bony margin of the oval window. In its early stages, the process is a true new formation of osteoid tissue and not a transformation of old bone. It is characterized by the large size of the osseous spaces and haversian canals, the spaces are filled with connective tissue rich in cells, which surround large and small blood vessels. Osteoclasts are not seen at this stage. Later on, the diseased areas become sclerosed by the deposition of new bone in the walls of the spaces. There is usually a sharp line of demarcation from the uninvolved portions. In the early stages, the nerve structures are normal, as a rule.

All authors have taken it for granted that the change is superinduced on

previously normal bone structure, with which hypothesis we are at variance.

It must be recognized, as shown by Kerrison,⁷ that several varieties of the disease may exist, varying in mechanical results according to the region involved. In some cases the region about the oval window is the chief seat of abnormality. In others, there may be foci of change in widely separated portions of the petrous bone, in parts of the labyrinthine capsule not closely related to structures essential to cochlear function. In still other cases, the distribution of the pathologic process is such as to involve directly cochlear structures, with functional reactions characteristic of cochlear nerve involvement.

In the experimental rats studied by us there were present changes in the temporal bone that are similar

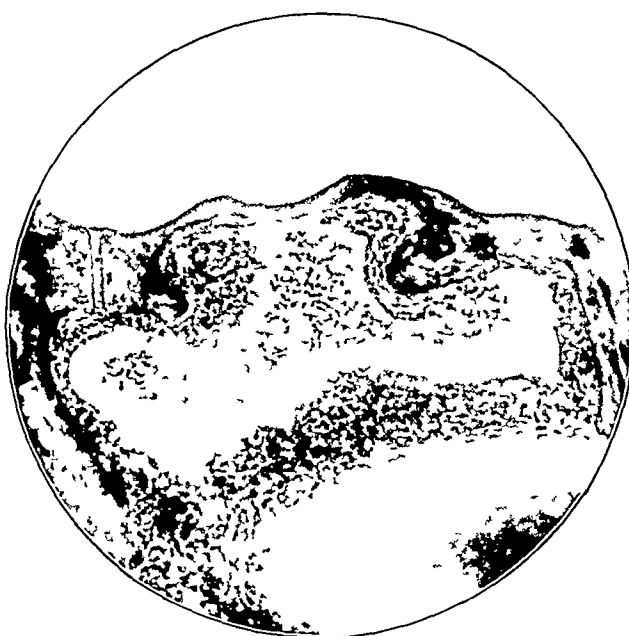


Fig 4—Central part of the foot plate of the stapes bent outward into the cavity of the middle ear, the marginal portions projecting into the vestibular cavity. The annular ligament on the right (anterior margin of the oval window) is indistinct and there is irregularity of calcification slightly reduced from a photomicrograph of 155 diameters magnification.

¹ Von Trötsch A. Die Krankheiten des Ohres. Ed 2. Wurzberg. Schel. 1862.
² Beck I C. Roentgenographic Diagnosis in Otosclerosis. Laryngoscope 25: 1-4. 1915.

³ Bezold F R and Siebenmann F R. Text Book of Otology translated by Jacques Holinger. Chicago E H Colegrove 1908.
⁴ Kerrison P D. Diseases of the Ear. Philadelphia J B Lippincott Company 1921.

in most respects to the foregoing findings. We have produced osteoid changes in the capsule of the labyrinth and coils of the cochlea, together with changes involving the stapediovestibular region.

It must be noted that these changes have been produced more or less acutely and extensively, in contradistinction to the more chronic and localized process that takes place in otosclerosis. However, the anatomic changes which accompany the healing of experimental rat rickets have been thoroughly studied by other investigators, and so far as the changes in the temporal bone are in exact accord with the changes in the long bones, we feel justified in assuming that similar healing processes would take place here, and give a picture identical with advanced otosclerosis, an involvement like that produced experimentally being a precursor of the latter condition. It has been shown that the relative proportions of the dietary components (vitamins and inorganic salts) determine whether the animal will develop bones which are normal or pathologic, and in the latter case whether the animals will have rickets, osteoporosis or osteosclerosis.⁸

SUMMARY

In young rats which have been maintained on a diet low in fat-soluble vitamin A and in calcium there occur abnormalities of the osseous capsule of the internal ear which are identical with those changes in the long bones which are characteristic of experimental rickets.

These alterations, since they occur in structures concerned in the function of hearing, may result in an impairment of hearing.

The analogies between the changes in the temporal bones in experimental rickets and the lesions which have been described in otosclerosis suggest that the latter condition may be a late result of rickets or a manifestation of a dietary deficiency still existent during adult life.

⁸ McCollum E V and Others. Studies on Experimental Rickets VIII Conditions Which Must Be Fulfilled in Preparing Animals for Testing the Antirachitic Effect of Individual Foodstuffs. Bull Johns Hopkins Hosp 33: 296 (Aug) 1922.

Reproduction in Tsetse Flies—Tsetse flies differ from all others of their family in their remarkable manner of reproduction. They do not lay eggs, but the single developing larva is retained within the body being nourished by special glands on the walls of the uterus. The larva is full grown before it is born and occupies practically the entire swollen abdomen of the mother. In *Glossina palpalis* the first larva is born three or four weeks after mating and another is born every nine or ten days provided the temperature is around 75 or 80 F. In one captive fly eight larvae were produced in thirteen weeks and only one egg was found left in the body. Pregnant flies often abort when disturbed and cases are known in which the larvae pupated within the abdomen of the mother, to the destruction of both of them.—Chandler. Animal Parasites and Human Disease.

NONSURGICAL REMOVAL OF PARAFFIN IN THE URINARY BLADDER

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The literature concerning foreign bodies in the bladder describes a large variety of articles. These have either been introduced from without by the patient or the medical attendant, or have ulcerated their way into the bladder from a neighboring viscus. Among the articles may be mentioned hairpins, straws, quills, gum, broken catheters or filiforms, nails, closed safety-pins, gauze, sponges and bullets. Rarely, nonabsorbable ligature material may erode its way through the bladder wall, following an operation on nearby pelvic organs. The silk, silkworm, or silver wire may then be seen lying free in the bladder or adherent to the mucous membrane, usually still knotted. Luys¹ has illustrated such an occurrence.

Occasionally the urologist is confronted with a case of wax or paraffin in the urinary bladder. The method and the reason for introducing the object are well known. The patient usually fashions a bougie out of wax or paraffin, and then, during the self-imposed urethral manipulations, the object slips inward beyond reach. In the endeavor to recover it, the bougie is sometimes forced back into the bladder, and we then have the clinical condition of foreign body to deal with.

Many ingenious instruments have been devised for removing objects from the bladder. The simple hollow tube known as the Kelly cystoscope is perhaps the easiest to use in

the female. These tubes are now made with a distal light on a light carrier, and it is no longer necessary to wear a head-mirror. Alligator forceps are introduced through the tube, grasping and removing the foreign body. Young's rongeur cystoscope, Young's cystoscope lithotrite, the Brown-Buerger operating cystoscope, and the Bigelow lithotrite all are of utmost value in attacking this problem.

The case here submitted is one in which gasoline was injected into the bladder to dissolve a crayon which the patient had introduced. This method of removal, while new, is not original having first been recorded by Caples² in 1919.

REPORT OF CASE

History—E W a man aged 23 was referred, Jan 16 1922 by Drs T I Goudry and W I Gibson with the complaint that he had a crayon pencil in the bladder. The past

¹ Luys Georges. Cystoscopy and Urethroscopy. St Louis C V Mosby Company 1918 p 189.
² Caples B H. Foreign Bodies in the Urinary Bladder. Surg Gynec & Obst 15 (1919).

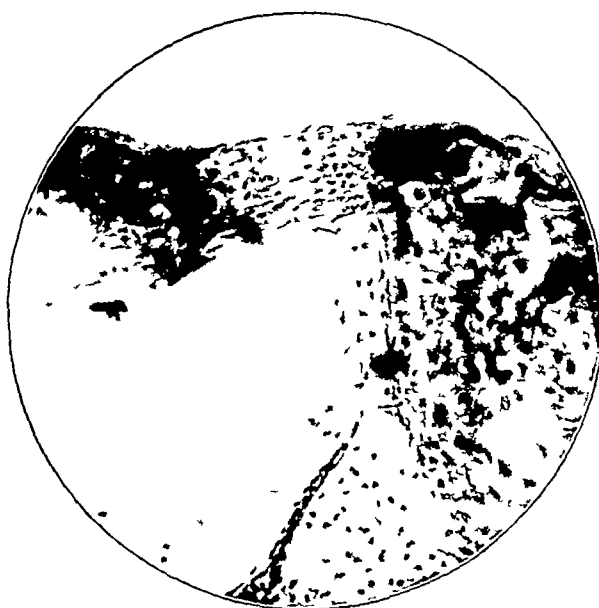


Fig 5—Anterior margin of the oval window. The annular ligament is almost completely replaced by cartilage slightly reduced from a photomicrograph of 275 diameters magnification.

history was negative. He had always been strong and healthy, and had never consulted a physician before. The present illness began four days before his first visit, while the patient was testing out the caliber of his urethra with a commercial colored crayon, such as children use in school. Within the first twenty-four hours he began to pass gross blood and an occasional small clot. The bleeding was terminal, and consisted of about three drops. Frequency became progressively worse, until when seen he was voiding every half hour, accompanied by pain in the glandular portion of the urethra, occasionally referred to the rectum. There was no renal colic, and no pain above the level of the bladder, anteriorly or posteriorly. Nocturnal frequency was the same as during the day, and the patient stated that he did not pass any particles of the crayon.

Examination—Urine voided into two glasses was opaque from presence of pus and blood. The external genitalia, the contents of the scrotum, the inguinal rings and the rectum were normal. Cysto-urethroscopy, with 4 per cent solution of procain, was performed. A Brown-Buerger cysto-urethroscope, size 18 French, passed easily and revealed no residual urine. The bladder capacity was 250 c.c. The bladder was washed repeatedly until the solutions became clear. The mucous membrane was injected throughout, red and velvety, but no areas of ulceration were seen. In the bas-fond of the bladder, posterior to the interureteric ridge, were two pieces of red crayon lying crossed like the letter X (Fig 1). The patient stated that two days before, during the act of voiding, he felt a sudden snap in the bladder, and thought that the crayon had broken. Both ureteral orifices were normal in appearance. They were not catheterized. The vesical outlet and the posterior urethra were inflamed to about the same degree as the bladder.

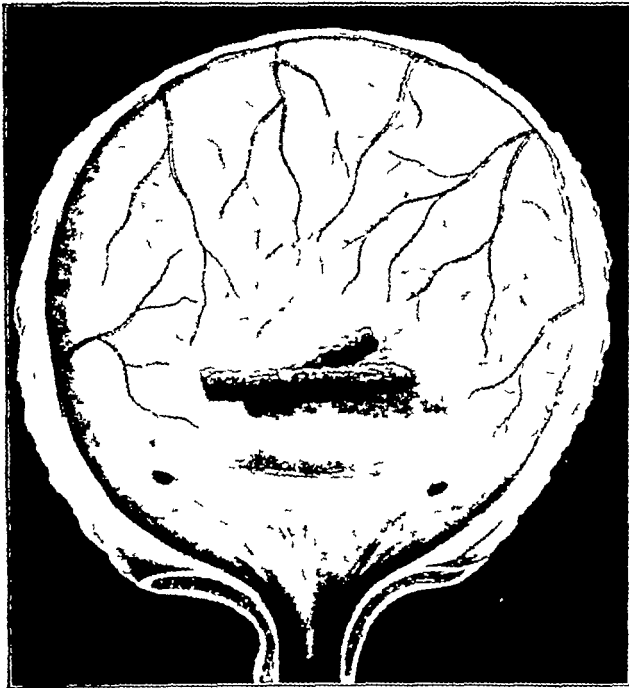


Fig 1—Semidiagrammatic view of the two pieces of crayon lying in the bladder, as seen through the cystoscope.

Treatment and Course—The next day, which was the fifth day of the disease, 1 ounce (30 c.c.) of filtered gasoline, 70 proof, and 2 ounces (60 c.c.) of light liquid petrolatum were heated to a temperature of 105 F and injected into the bladder through a Nelaton catheter. The patient retained this for one hour and forty-five minutes without much discomfort. He then voided 5 ounces (300 c.c.). The gasoline and oil floated to the top of the container, and many red particles of the crayon settled to the bottom. Six hours later the injection was repeated, and was retained for two hours

without discomfort. The patient was up and about, coming to the office for his treatments. On the second day of treatment, the voided urine contained many crumbs and fragments of the crayon. During the act of micturition, while seen in my office, the stream became suddenly interrupted, and the patient could not void. The next moment he passed the large curved fragment seen in Figure 2, and at subsequent voiding the urine changed from red (particles of crayon in suspension) to straw color. Pain in the bladder and urethra was

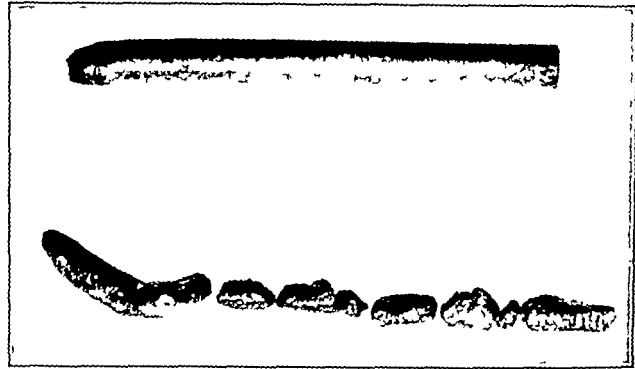


Fig 2—Above crayon similar to the one used by patient; below, some of the larger pieces of the crayon which were voided about three-fourths the actual size.

much less. The patient felt fine, and wanted to go back to work. No further injections of gasoline were given. The patient was put on hexamethylenamin and told to return in a week. One week after the urine had ceased to contain particles of crayon, the bladder was clear of any foreign material. There was still a moderate amount of cystitis. The third cystoscopy, about two months later, revealed the bladder absolutely normal.

COMMENT

If I had not chanced across Caples' article, this patient would probably have been submitted to a suprapubic cystotomy. I saw a similar case during my hospital internship. A young man had fashioned a bougie out of a piece of paraffin candle and passed it on himself. When seen in the bladder through the cystoscope, the paraffin was in a rounded mass and floated. This patient was subjected to suprapubic cystotomy, as Caples' method was then unknown.

It is surprising how well the bladder tolerates the mixture of gasoline and liquid petrolatum, even in the presence of more or less acute cystitis, which is usually the case. This patient retained his first injection for one and three-quarters hours, and some of the others as high as five hours. He had a total of six injections of gasoline and liquid petrolatum.

Experiments as to the solubility of various brands of wax or paraffin, colored crayons and Christmas candles brought out the fact that most of them will dissolve in the one-third gasoline, two-thirds liquid petrolatum mixture, in about two hours at body temperature. If the container is agitated by shaking, they dissolve sooner.

Some of the colored crayons do not dissolve at all, but the cohesive substance which holds together the particles dissolves and the crayon crumbles. The crayon in this case was $3\frac{1}{2}$ inches long, and had a caliber of 24 French when the paper wrapper was removed. If we are dealing with the type of crayon that goes into complete solution, the paraffin can be recovered by chilling the urine. This causes the paraffin to be precipitated out in its solid state, and the paraffin can then be collected and the total from the different voidings measured.

This case is reported so as to call attention to the fact that it is not necessary to perform a suprapubic cystotomy or perineal section to remove wax or paraffin from the bladder. The crayon could have been removed with Young's cystoscopic rongeur, but this would have necessitated the withdrawal and the reintroduction of the cystoscope many times, biting off a small piece each time, on account of the object's friability. Since the rongeur is size 30 French, this is far from a pleasant procedure for the patient. To the general practitioner, when there is a history of wax or paraffin in the bladder, it is not even necessary to submit the patient to instrumentation, it being such a simple matter to inject a little gasoline and liquid petrolatum.

SUMMARY

A patient who had passed a colored crayon into the bladder was given six injections of gasoline and liquid petrolatum, which dissolved the crayon.

35 Chestnut Street

A STUDY OF LIGHT WAVES IN THEIR
RELATION TO RICKETS*

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AND

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NEW YORK

Recent investigation has established the fact that white rats can be regularly protected against rickets by means of sunlight or artificial rays produced by the mercury vapor quartz or the carbon arc lamp.¹ All these sources of light emit not only visible radiation, but also ultraviolet rays of various wave lengths. In a previous paper, Hess, Unger and Pappenheimer drew attention to the fact that rats which were confined in an enclosure of ordinary window glass (3 mm thick) failed to be protected by sunlight, as by this procedure the effective rays were filtered out of the spectrum. In a subsequent paper,² it was shown that a filter of ordinary window glass (Corning), which transmitted ultraviolet waves as short as 334 millimicrons, intercepted the effective rays from the mercury vapor lamp, indicating that not all ultraviolet rays possess this property, but that it is associated only with waves shorter than 334 millimicrons. The proposition was advanced that the longest waves of value in relation to rickets lie in the neighborhood of 300 millimicrons. Recently, Pacini,³ in a consideration of this subject, has expressed the same opinion. Shipley⁴ believes that very short ultraviolet rays, those about 210 millimicrons in length, probably have the greatest antirachitic effect.

In the present study we have attempted a closer analysis of the spectrum in order to ascertain more precisely which waves exert this remarkable protective action. A partial abstract of this work will be found

elsewhere.⁵ The method of procedure has been to interpose selected filters between the source of light and the experimental animals, and to note whether irradiation prevented the development of rickets. The rats were 4 weeks old at the outset, and were fed the

TABLE 1—FILTRATION OF RAYS (MERCURY VAPOR QUARTZ LAMP)

Rat No	Weights Gm	Filter	Exposure Time Min	Dis- tance In	Lower Limit of Spectra of Filters Mill microns	Rickets	
						Roent- geno- gram	Micro- scopic Exam- ination
949	38-40	G 38 H	10	12	475	Moderate	Marked
950	40-40	4 6 mm				Moderate	Marked
951	38-40					Moderate	Marked
1063	50-64	G 38 H	30	9	475	Moderate	Moderate
1064	40-52	4 6 mm				Moderate	Moderate
1065	40-40					Moderate	Slight
1066	44-50					Moderate	Moderate
1204	50-50	G 38 H	60	9	475	Moderate	Moderate
1205	40-50	4 6 mm				Moderate	Moderate
1206	50-44					Moderate	Slight
1207	40-44					Moderate	Slight
1302	70-100	Window glass	15	36	334	Marked	Marked
1303	50-80	2 6 mm				Marked	Marked
1304	56-60					Marked	Marked
1305	54-60					Marked	Marked
1493	50-58	Window glass	30	9	334	Marked	Marked
1494	32-44	2 6 mm				Marked	Marked (slight calcification)
1488	42-50	Window glass	60	9	334	Marked	Marked
1489	40-44	2 6 mm				Moderate	Marked
1490	38-40					Moderate	Marked
1491	38-50					Marked	Marked
952	30-34	G 586 A	10	12	302	Moderate	Extreme
953	40-40	4 3 mm				Moderate	Extreme
954	20-28					Moderate	Extreme
1067	40-40	G 586 A	30	9	302	Very slight	Minimal
1068	40-52	4 3 mm				Slight	Minimal
1069	40-42					Slight	Minimal
1070	42-42					Neg (?)	Almost neg
1200	50-50	G 586 A	60	9	302	Neg (?)	Negative
1201	54-40	4 3 mm				Neg (?)	Slight
1202	50-50					Neg (?)	Negative
1203	50-40					Neg (?)	Negative
1512	44-50	Pyrex	3	18	289 (280?)	Slight	Slight
1513	44-50	0 8 mm				Negative	Slight
1514	40-44					Slight (?)	Slight
1515	40-48					Slight (?)	Slight
1516	40-48	Pyrex	6	18	289 (280?)	Negative	No R. (os teoporosis)
1517	30-36	0 8 mm				Negative	Very slight R.
1518	40-50					Negative	No R. (os teoporosis)
1519	46-50					Negative	No R.
1330	54-54	Pyrex	15	18	289 (280?)	Negative	No R.
1331	40-40	0 8 mm				Negative	No R.
1332	54-44					Negative	No R.
1333	40-40					Negative	No R.
1334	54-60	G 86 B	12	18	302	Marked	Marked
1335	48-60	4 2 mm				Marked	Marked
1336	40-50					Marked	Marked
1337	50-56					Marked	Marked
1500	30-30	G 86 B	30	9	302	Moderate	Marked
1501	32-30	4 2 mm				Moderate	Marked
1502	30-34					Moderate	Marked
1503	30-36					Moderate	Marked
1496	30-34	G 86 B	60	9	302	Moderate	Marked (calcification)
1497	32-34	4 2 mm				Marked	Marked
1498	30-30					R (?)	Marked
1499	30-30					Moderate	Marked

* From the Department of Pathology of the Columbia University College of Physicians and Surgeons.

1 Hess A F, Unger L J and Pappenheimer A M. *Proc Soc Exper Biol & Med* 19 8 1921-1922. Shipley P G, Park E A, Powers G F, McCollum E V and Simmonds Nina. *Ibid* 19 43 1921-1922. Powers G F, Park E A, Shipley P G, McCollum S V and Simmonds Nina. *Ibid* 19 120 1921-1922. Hess A F, Unger L J and Pappenheimer A M. *Ibid* 19 238 1922.

2 Hess A F. *The Influence of Light in the Prevention and Cure of Rickets*. *Lancet* 2 367 (Aug 19) 1922.

3 Pacini A J. *M Herald & Electrotherapist* October 1922.

4 Shipley P G. *Faulty Diet and Its Relation to the Structure of Bone*. *J A M A* 79 1563 (Nov 4) 1922.

Sherman and Pappenheimer low phosphorus diet. For the most part the source of light was the mercury vapor, air cooled lamp, run at 76 volts. In order to obtain a desired dosage, the lamp was placed at varying distances, and used for varying periods of time, as may be noted in the accompanying tables. The filters

5 Hess A F, Pappenheimer A M and Weinstock Mildred. *Proc Soc Exper Biol & Med* 20 14 1922.

- Burge W E Am J Physiol 36 35 1914 1915

the visible than when the purple filter (G 586 A) was used. These spectrograms fail to illustrate this aspect of the question, as they do not register rays longer than about 450 millimicrons, whereas the visible part of the spectrum includes rays 720 millimicrons in length. It was found on examining these two filters by means of

TABLE 2—CARBON ARC IRRADIATION CLOTHING MATERIALS

Rat No	Weights Gm	Material	Exposure		Rickets	
			Time Min	Distance Feet	Röntgenogram	Microscopic Examination
1545	42-48	Thin cotton (nainsook)	10	3	Negative	None
1546	40-42				Negative	None
1547	40-50				Negative	None
1548	60-60				Negative	None
1549	40-46	Cotton stocking	10	3	Negative (?)	Slight
1550	28-28				Moderate	Moderate
1551	60-64				Rickets	Moderate
1552	28-26				Rickets	Marked
1659	70-66	Cotton stocking	30	3	Slight	Very slight
1660	60-54				Negative	No definite
1661	58-60				Negative	No definite
1662	66-60				Slight	No definite
1553	40-54	Woolen stocking	10	3	Rickets	Moderate
1554	60-60				Negative (?)	Very slight
1555	50-60				Moderate	Moderate
1556	70-68				Moderate	Moderate
1655	80-70	Woolen stocking	30	3	Slight	No definite
1656	50-40				Negative	Slight
1657	76-70				—	Very slight
1658	44-40				—	Slight

a spectrophotometer that the nearly neutral glass, which failed to allow protection, transmits about 90 per cent of red rays of 680 millimicron wave length, and about 87 per cent of yellow rays of 540 millimicron wave length, whereas the purple filter (G 586 A) transmits only 3 per cent of red, and none of the yellow rays. Furthermore, the neutral filter allows the passage of infra-red waves which are entirely excluded by the purple filter. In view of this marked distinction in transmissibility, it seems probable that the difference in the action of these filters rests in their difference in permeability to long rays—that either the infra-red or visible rays, or both, exert a neutralizing or inhibitory effect on the radiations which protect against rickets. As experiments are under way to test this hypothesis further, we shall postpone a detailed consideration of this interesting aspect of the subject.

A series of experiments was undertaken to test the transmissibility of some clothing materials which are commonly worn by young infants. This seemed worth while in order to gain a conception of the degree to which clothing filters out the protective rays of the sun. As this was the object of the test, the carbon arc lamp, the rays of which more nearly resemble sunlight, was used instead of the mercury vapor lamp. White flanne carbons were inserted, and the lamp was placed at a distance of 3 feet, under these conditions, irradiation of about three minutes with 30 amperes suffices to protect white rats. Filters of thin white cotton dress material, and of white cotton stocking, and of wool stocking material were interposed as filters between the animals and the carbon arc lamp. They were placed at a distance of 6 inches from the rats. It was found that the thin cotton material offered but little hindrance to the protective rays. When ten "protective units" of carbon light were given these rays were able to traverse not only the cotton but even the woolen stocking material. All these materials were white, or

almost white. Another test was devised to ascertain the difference in transmissibility of white and of black material. To this end cotton goods, counting ninety-six by 120 threads to the square inch, and manufactured on the same loom—differing, therefore, merely in color—were employed as filters in the same way as in the previous experiment. Exposures were made of ten and twenty minutes' duration, using the respective materials. As Table 3 shows, the black cotton material (which was dyed with an anilin dye) acted as a more potent filter than the white material. This is in keeping with the accepted opinion that black possesses marked absorptive affinity for ultraviolet rays.

COMMENT

It follows from our experiments that, in order to be of value in rickets, ultraviolet waves must have a wave length not longer than 302 or possibly 313 millimicrons. This renders light that has passed through ordinary window glass of no therapeutic value in this disorder. The shortest waves of sunlight that reach the surface of the earth are about 290 millimicrons, and vary greatly in intensity according to the time of the day and the season of the year. Indeed, when the atmosphere is heavy with moisture, smoke, or dust the shortest of these waves are absorbed. It is evident, therefore, that the range of effective radiations is markedly circumscribed by nature, and further limited by meteorologic conditions. The foregoing experiments serve to emphasize the remarkable specificity of wave lengths of light in relation to rickets. It can be stated with confidence that waves 324 millimicrons in length have little or no value in protecting against rickets, and that waves of 302 millimicrons are of great value in this respect. This signifies that a difference of about thirty millionths of a millimeter in wave length suffices to render ultraviolet light effective or ineffective.

In this connection, attention may be called to some experiments of Burge⁷ on the coagulating property of

TABLE 3—CARBON ARC IRRADIATION—WHITE AND BLACK MATERIAL

Rat No	Weights Gm	Material	Exposure		Rickets	
			Time Min	Distance Feet	Röntgenogram	Microscopic Examination
1390	50-50	White	10	3	Rickets	Marked
1391	44-50				Slight	Moderate
1392	40-50				Slight	Slight
1393	50-50				Slight	Moderate
1618	44-42	White	20	3	Slight	Slight
1619	44-38				Slight	None
1620	50-48				Negative	None
1621	50-42				Negative	None
1394	50-52	Black	10	3	Marked	Marked
1395	46-50				Marked	Very marked
1396	54-58				Marked	Very marked
1397	50-52				Marked	Very marked
1622	48-50	Black	20	3	Rickets	Moderate
1623	54-40				Slight	Slight
1624	48-50				Marked	Marked
1625	46-50				Marked	Moderate

light, in which he found that the longest waves able to coagulate egg white were 302 millimicrons in length. The similarity of this result to that described above may be found to have some significance. Looking at the question from the other end, it is apparent that we have been unable to ascertain the exact wave length at which the effect begins and still points to the

has not been possible to filter out the radiations in the near ultraviolet region (from 400 to 300 millimicrons) and at the same time allow the passage of radiations in the far ultraviolet. It should be borne in mind that the shorter the light waves in this region the more irritating they are, so that it is probable that there is a therapeutic limit also in this direction.

The experiments with clothing material indicate that the rays do not have to impinge directly on the surface of the skin. Clothing must be regarded as other filters which screen the effective rays, namely, according to their texture or thickness. Furthermore, a direct quantitative relationship exists between the nature of the material and the duration of exposure to sun's rays or artificial sources of light. Black clothing will absorb more of the effective ultraviolet rays than similar white material.

The spectrum would seem to contain not only rays which can prevent or cure rickets, but also longer rays which are able to neutralize or inhibit the effect of these beneficent radiations. This phenomenon points to the need and the value of an analysis of rays employed in heliotherapy in rickets, tuberculosis, and other diseases. It would seem to indicate that this valuable therapeutic agent will be used with the employment of filters to absorb radiations which may be not only ineffective but counteracting.

Clinical Notes, Suggestions, and New Instruments

EXTERNAL CRICODYNIA ITS CONTROL THROUGH THE NASAL (SPHENOPALATINE OR MECKEL'S) GANGLION

GREENFIELD SLUDER M.D. ST. LOUIS

CASE 1—For twenty years I have occasionally treated a man now 55 years old, for acute inflammatory attacks in the lower pharynx, larynx and upper windpipe. His history is otherwise negative, save that he is underweight and not as strong as most men. In each of probably a dozen attacks he complained of a painful spot at the cricoid cartilage, in the external neck with tenderness to slight pressure. I construed this to be a slight external perichondritis. It has always disappeared with recovery from the inflammatory attack.

CASE 2—Two years ago I had a case identical with the foregoing in a man then 40 years of age. Eight years ago he had a tuberculous disease of the lumbar spine which confined him to bed in a plaster-of-Paris jacket for six months, since which he has been strong and well. His history is otherwise negative. For twenty-five years I have treated him for an occasional acute inflammatory attack of the nose, throat, larynx and windpipe each lasting about a week and ending in recovery. With the attack two years ago he developed a painful external cricoid. The inflammatory attack was well in a week or ten days, but the cricoid remained very tender and painful for six months. I again thought of perichondritis, but could never discover any thickening of the tissues at the cricoid. Aside from the pain at the cricoid no diagnosis could be made. For this reason I have elected to term it external cricodynia. Everything that I could do for him was in vain. He complained constantly bitterly of the pain particularly when touched as, for example by his collar.

CASE 3—In the past year I have had another case identical in every way with Case 2. The patient is a strong normal man 33 years old. He had a chronic tonsillitis for which I did tenlectomy. His sense of general well-being is improved by it, but the painful cricoid was unchanged.

Remembering some of the surprising and inexplicable results¹ obtained by anesthetizing the nasal (sphenopalatine-Meckel's) ganglion, I resorted to this experiment, and to my delight it stopped the cricodynia for two weeks. A second cocaineization was again successful, and until now (six months later) it has not returned. There was nothing in the case to suggest its being a nasal ganglion case.

One month ago the second patient returned complaining of the external cricodynia. Anesthetizing the nasal ganglion stopped it, and it has not as yet returned.

I have had one more case of cricodynia which I controlled through the nasal ganglion, in a patient whom I saw only twice, in my office.

At present I am unable to speculate as to the path of the impulse or the mode of accomplishment for this result.

3542 Washington Avenue

AN INSTRUMENT (DRILL) TO FACILITATE THE CORRECTION OF CERTAIN TYPES OF EXTERNAL DEFORMITIES OF THE NOSE

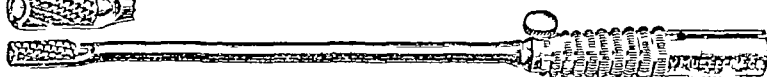
SIDNEY ISRAEL M.D. HOUSTON TEXAS

In the correction or reduction of certain types of external deformities of the nose, those of us that have labored with the rasps, saws and chisels realize the limitations occasionally encountered of certain of these instruments, and the difficulties necessary to overcome. As a result of work on the cadaver, as well as on the living patient, a drill or burr has been devised, by the use of which I have succeeded in meeting and correcting these difficulties.

The drill is especially indicated in the correction of lateral displacement, or deformity of the bony nasal framework when it is necessary to mobilize the nose completely previous to replacement in the corrected position. Its use in this type of deformity renders the need for saws or chisels unnecessary.

In the reduction of bony prominences, exostoses, or the like it is invaluable, and with it one can smooth, round or bevel the bone, as would best suit the individual case.

The drill or burr will attach to any small motor, by means of a flexible cable, and from the illustration one can see that the cutting or drill head is carefully protected by means of the steel hooded guard, which is a continuation of the main shaft, at the distal end and covers two thirds of its entire circumference. When the instrument is introduced beneath



Drill for correction of certain types of external deformities of the nose

the skin, only the part of the drill in actual contact with the bone is exposed. The adjacent structure, together with the structures beyond and the overlying skin, is carefully protected by the guard surrounding the rotating drill or burr-head.

Carter Building

A RAPID TECHNIC FOR PREPARING HISTOLOGIC SECTIONS BY THE PARAFFIN METHOD

V. D. KEISER A.B. M.D. ALCON, OHIO

The paraffin method of preparing tissues for histologic study has been, as a rule, the method of choice of most histologists. But in the clinical laboratory, where the element of time is important, the pathologist has often discarded the

¹ Dean L. W. The Control of Glossodynia Through the Nasal (Sphenopalatine or Meckel's) Ganglion. South M. J. 15: 856 (Oct.) 1922. Ewing A. E. Pain of Acute Glaucoma Relieved by Cocaine Applied to Meckel's Ganglion. Am. J. Ophth. December, 1908. Miller H. E. Intra Ocular Tension in Glaucoma Lowered by Injection of the Sphenopalatine Ganglion. Index of Otolaryngology 3, No. 4. Sluder Greenfield. Headaches and Eye Disorders of Nasal Origin. St. Louis, C. V. Mosby Company, 1918. The Control of Earache Through the Nasal (Sphenopalatine Meckel's) Ganglion. J. A. M. A. 78: 1703 (June 3) 1922. The Control of Mandibular Pain Through the Nasal (Sphenopalatine Meckel's) Ganglion. Tr. Am. Laryngol. A. 1922.

paraffin method for other methods that are more rapid. The modification here described preserves the advantages of the paraffin methods as to quality of sections, and the like, and yet lends itself well to the needs of the clinical pathologist.

This method depends primarily on a hastening of the dehydration process by using hot acetone as the dehydrating agent. This is accomplished in this laboratory by placing the fixed tissue in a specimen bottle of thick glass of about 30 c.c. capacity. The bottle is tightly corked and the cork clamped in place after the addition of about 25 c.c. of acetone. The bottle so prepared is then put in the paraffin oven which is kept at 60 C. After two hours the dehydration process is completed with most tissues as evidenced by the absence of a turbidity on the addition of xylene. As acetone is about as inflammable as alcohol, the pressure flask should not be opened near a flame.

DETAILS OF THE METHOD

1 Blocks of tissue are cut as thin as practicable, and boiled for one minute in a 10 per cent dilution of liquor formaldehydi.

2 While still hot, the tissue is dried with blotting paper.

3 The tissue is placed in a specimen bottle, about 25 c.c. of acetone is added, and a cork is clamped in place. The bottle is placed in the paraffin oven at 60 C.

4 After two hours it is removed from the paraffin oven and uncorked. Care must be taken at this point to remove the cork slowly, preferably with the whole container enveloped in a towel. A very considerable pressure has been created within the container, and, on removal of the clamp, the cork may fly out and the acetone expand with explosive violence.

5 If the tissue contains a considerable amount of fat as in omentum or breast, it is treated with 15 or 20 c.c. of ether for fifteen or twenty minutes. (This suggestion of my colleague Dr. T. H. Boughton, of Akron City Hospital, has proved of value in sectioning fatty tissue.)

6 It is treated with 10 or 15 c.c. of xylene. The absence of turbidity is noted. Should turbidity appear, another hour in fresh acetone in the paraffin oven will complete the dehydration process. From fifteen to twenty minutes in xylene is ample time.

7 It is placed in high melting point paraffin in the paraffin oven for two hours.

8 It is blocked out and cooled in ice and salt solution. Cooling in an ice and salt solution seems, in our hands, to prevent troublesome crystallization of paraffin.

9 It is cut in sections at 5 microns, and spread on water at 38 C.

10 It is transferred by means of a plain glass slide to the surface of ice water.

11 It is mounted on a slide smeared with Mayer's albumin fixative.

12 The slide is placed in the paraffin oven for fifteen or twenty minutes.

13 Staining with hematoxylin and eosin is done at once.

14 It is mounted in balsam.

COMMENT

Since we have been taking sections up from a cold solution rather than from the warm solution on which they have been spread we have experienced no appreciable trouble in having sections float off the slides during the staining process.

The method has resulted in materially shortening the time in which this laboratory can render a pathologic report after receipt of the pathologic material.

Proper Training in Physiotherapy—It seems to be quite clear that granted that we get a group of men and women interested enough in physiotherapy they will see that they get the proper amount of information. It is essential that they get their training under the best possible auspices. There is responsibility upon the medical profession to provide such training for those who want it and are prepared to receive it.—R. L. Wilbur, *California State J. Med.* 21:25 (Jan.) 1923

Special Articles

TYPHOID IN THE LARGE CITIES OF THE UNITED STATES IN 1922

ELEVENTH ANNUAL REPORT

THE JOURNAL presents its eleventh annual survey¹ of typhoid fever mortality in the cities of the United States having more than 100,000 population. The statistics of the fourteenth census showed that there were in 1920 sixty-nine cities with a population of more than 100,000. These may be conveniently considered for our purpose in six groups. More than one fourth of the population of the United States lives in these

TABLE 1—CLASSIFICATION OF CITIES

	Population	Number of Cities
Group 1	More than 500,000	12
Group 2	From 300,000 to 500,000	9
Group 3	From 200,000 to 300,000	12
Group 4	From 150,000 to 200,000	10
Group 5	From 125,000 to 150,000	9
Group 6	From 100,000 to 125,000	17

cities, and nearly one sixth lives in the twelve cities with more than 500,000 population.²

As has been the case since 1920, every one of the twelve largest cities (Group 1, more than 500,000 population) had a typhoid death rate under 10, and, as in 1920 also, all but one had a rate under 5. In 1921 we were obliged to note that seven of these twelve cities showed a slight typhoid increase, as compared with the remarkably low figures for 1920. The year just past, however, has witnessed a resumption of the decline in

TABLE 2—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 1 (MORE THAN 500,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1922	1921	Average 1916-19	Average 1911-15	Average 1906-1910
Chicago	10	11	24	82	158
Boston	14	31	25	80	160
Cleveland	22	34	40	100	157
New York	22	21	32	80	185
San Francisco	22	42	46	136	273
Philadelphia	27	23	49	112	417
Buffalo	30	42	81	154	298
Los Angeles	37	26	36	107	190
Baltimore	40	54	118	237	521
St. Louis	42	38	65	121	147
Pittsburgh	46	41	77	159	600
Detroit	50	68	81	154	228

typhoid death rate, all but three of these cities showing a lower rate for 1922 than for the low year of 1920. The increases are, for the most part, trivial and to be expected on the basis of ordinary yearly fluctuation.

1 The preceding articles were published May 9 1914 p 1473 April 17 1915 p 137 March 17 1917 p 845 March 16 1918 p 860 and March 6 1920 p 672 March 26 1921 p 890

2 The number of typhoid death has been reported of health and the rates have been calculated of the midyear 1921 population estimate of the Bureau. In a few instances indicated in the text, it may perhaps be noted that some instances of typhoid fever in the city of Philadelphia occurred within the undoubted limits of the amount of typhoid fever in the city of Philadelphia agreed to in an informal agreement between the City of Philadelphia and the U. S. Public Health Service. The mortality statistics for the city of Philadelphia for the year 1921 would be checked and

Six of these large cities had a rate under 3. The Baltimore rate is so low (4.0) as to be worthy of particular notice, especially considering the fact that, so

TABLE 3—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 2 (FROM 300 000 TO 500 000 POPULATION)

	Deaths from Typhoid per 100 000 Population				
	1922	1921	Average 1916-1920	Average 1911-1915	Average 1906-1910
Minneapolis	1.9	1.2	5.0	10.6	32.1
Milwaukee	2.5	1.9	6.5	13.6	27.0
Newark	2.7	2.8	3.3	6.8	14.6
Seattle	2.8	2.2	2.9	5.7	25.2
Cincinnati	2.9	3.4	3.4	7.8	30.1
Kansas City Mo.	4.9	11.0	10.6	16.2	35.6
Washington D. C.	5.2	6.6	9.5	17.2	36.7
Indianapolis	5.4	7.3	10.3	20.5	30.4
New Orleans	10.2	9.3	17.5	20.9	35.6

late as the five year period from 1916 to 1920, the average typhoid rate in that city was 11.8

The most complete typhoid records continue to be published by the New York City Health Department in its *Weekly Bulletin*. For the quarter ending Sept 30, 1922, for example, it is stated that the probable mode of infection was traced in 42 per cent of the cases, which is almost exactly the same as that for the corresponding quarter of the previous year. Out of town infection again stands highest in the list, the proportion remaining very constant, about 26 per cent of all cases. Bathing in polluted waters in New York City is credited with causing twenty-four cases, and contaminated shellfish with six cases. A number of cases of typhoid were traced to a Thanksgiving party in November, where ice cream was served. Several

TABLE 4—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 3 (FROM 200 000 TO 300 000 POPULATION)

	Deaths from Typhoid per 100 000 Population				
	1922	1921	Average 1916-1920	Average 1911-1915	Average 1906-1910
Providence	0.0	2.5	3.8	8.7	21.5
Columbus Ohio	1.1	4.0	7.1	15.8	40.0
Jersey City	1.6	3.5	4.5	7.2	12.6
Akron	1.9	5.7			
St. Paul	2.0	7.1	3.1	9.2	12.8
Rochester	2.5	3.2	2.9	9.6	12.8
Oakland	3.0	1.3	3.8	8.7	21.5
Portland Ore.	3.3	3.0	4.5	10.8	23.2
Toledo	3.8	8.6	10.6	31.4	37.5
Denver	5.9	4.5	5.8	12.0	37.5
Louisville	8.0	5.5	9.7	19.7	52.7
Atlanta	10.9	11.0	14.2	31.4	58.4

outside cases were also traced to ice cream from the same source. It was suspected, but not proved, that the wife of the proprietor of the ice cream store was a typhoid carrier. This outbreak illustrates what has been frequently observed in the carrier transmission of disease, namely, that the carrier condition first comes to light in connection with group outbreaks. If some meal or article of food partaken of by a large number of persons furnishes the clue, then the existence of a carrier may be detected, while otherwise the occurrence of scattered cases at long intervals may make an almost impossible epidemiologic tangle. Such outbreaks strengthen the opinion that untraced, and with the available information untraceable, cases of typhoid may be due in relatively large proportion to carrier infection. New York City is apparently practically free from water-borne and milk-borne infection.

Philadelphia is another city in which careful records of typhoid in recent years are available. While the data for 1922 have not yet been published, those for

1921 are interesting for comparison. The source of infection was traced in 58 per cent of the Philadelphia typhoid cases. Nearly one half of this number (43 per cent) were attributed to out of town infection. Other sources named are direct contact with other cases (twenty-two cases), bathing in polluted water (nineteen cases), and drinking polluted water from wells or springs (sixteen cases). No statement regarding carrier outbreaks is made for 1921, but it is fair to suppose that the proportion does not vary very much from that occurring in New York, since the other sources of infection seem very similar. The heavy toll paid by Philadelphia citizens for maintaining a polluted water supply for nearly fifty years may be seen by comparison of the rates in this city since 1860. In the first decade (1860-1870) the typhoid death rates ranged from about 60 to nearly 100, sometimes exceeding the latter figure. Between 1870 and 1880 the actual rate

TABLE 5—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 4 (FROM 150 000 TO 250 000 POPULATION)

	Deaths from Typhoid per 100 000 Population				
	1922	1921	Average 1916-1920	Average 1911-1915	Average 1906-1910
Syracuse	1.6	3.9	7.7	12.3	15.6
Worcester	3.1	3.2	3.5	5.0	11.8
Dayton	3.7	5.2	9.3	14.8	22.5
Omaha	4.4	4.0	5.7	14.0	40.7
Richmond	4.4	5.6	9.7	15.7	34.0
San Antonio	5.6	16.6	23.3	29.5	
Dallas	5.8	12.7	17.2		
New Haven	5.8	4.7	6.8	18.2	30.8
Memphis	8.9	9.0	27.7	42.5	35.3
Birmingham	12.5	17.0	31.5		

was somewhat lower, but in 1876, the year of the Centennial Exposition, the rate again reached nearly 100. Little improvement was noted between 1880 and 1890, but in the next decade the rate fell in several years almost to 30. The period 1900 to 1910 was again a time of great typhoid prevalence, the rate exceeding 70 on two occasions. In 1912, filtration for the whole city was completed, pasteurization of the milk supply has been general since 1914, with the eminently satisfactory results shown in the table (only 4.9 for 1916-1920).

We have received an admirable report on typhoid fever in Baltimore. An unusually large proportion (65 per cent) of the cases in 1922 were attributed with a high degree of probability to their source. About 35 per cent of the whole number of cases were regarded as due to out of town infection. About 6 per cent were regarded as due to household contact infec-

TABLE 6—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 5 (FROM 125 000 TO 150 000 POPULATION)

	Deaths from Typhoid per 100 000 Population				
	1922	1921	Average 1916-1920	Average 1911-1915	Average 1906-1910
Bridgeport Conn.	0.6	2.7	4.8	5.0	10.3
Grand Rapids	0.6	2.8	9.1	25.5	29.7
Scranton Pa.	1.4	6.5	7.8	9.3	31.5
Springfield Mass.	1.4	4.4	4.4	17.6	
Des Moines	1.5	1.4			
Patterson N. J.	2.1	5.8	4.1	9.1	19.7
Hartford Conn.	2.8	7.2	6.0	15.9	19.0
Youngstown Ohio	6.2		15.0		
Houston Texas	7.3	11.7			

tion, and about the same number to carrier infection. Well water infection was considered to have caused nearly 75 per cent of the cases. It is, of course, true that Baltimore has a high percentage of cases coming to

the city hospitals from rural communities in the neighborhood, and that, in a large proportion of these cases, infection was almost certainly contracted outside the

TABLE 7—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 6 (FROM 100,000 TO 125,000 POPULATION)

	Deaths from typhoid per 100,000 Population				
	1922	1921	Average 1916-1919	Average 1911-1915	Average 1906-1910
New Bedford	0.0	2.3	6.0	15.0	16.1
Yonkers	0.0	2.9	4.8	5.0	10.3
Cambridge	0.9	10.8	2.5	4.0	9.8
Albany	1.7	4.3	8.0	18.6	17.4
Lowell	2.6	5.2	5.2	10.2	13.9
Salt Lake City	3.2	5.7	9.3	13.2	
Fall River	3.3	2.4	8.5	13.4	13.5
Tacoma	4.0	3.0	2.9	10.4	19.0
Wilmington Del.	5.1	4.4			
Camden	5.7	6.6	4.9	4.5	
Spokane	5.7	4.7	4.9	17.1	50.3
Norfolk Va.	6.4	4.1			
Kansas City, Kan.	7.0	4.8	9.4		
Fort Worth	7.8	10.7			
Reading Pa.	9.2	11.7	10.0	31.9	47.0
Trenton	10.9	8.9	8.6	22.3	
Nashville	16.2	20.4	20.7	40.2	61.2

city. The remarkable decline in urban typhoid everywhere naturally brings it about that outside infection is coming to bear a more and more important relation to the total number of city cases. Many other American cities are in much the same position as Baltimore as regards typhoid deaths of nonresidents in the city hospitals. New Orleans, for example, has probably an even higher proportion of nonresident deaths. An exact comparison between city death rates thus becomes a difficult task, unless in all cases nonresident deaths in

TABLE 8—DEATH RATES FROM TYPHOID IN 1922

Honor Roll (from 0.0 to 2.0)			
New Bedford	0.0	Scranton	1.4
Providence	0.0	Springfield	1.4
Yonkers	0.0	Des Moines	1.5
Bridgeport	0.6	Jersey City	1.6
Grand Rapids	0.6	Syracuse	1.6
Cambridge	0.9	Albany	1.7
Chicago	1.0	Akron	1.9
Columbus	1.1	Minneapolis	1.9
Boston	1.4	St. Paul	2.0
First Rank (from 2.0 to 5.0)			
Paterson	2.1	Fall River	3.3
Cleveland	2.2	Portland	3.3
New York	2.2	Buffalo	3.5
San Francisco	2.2	Dayton	3.7
Milwaukee	2.5	Los Angeles	3.7
Rochester	2.5	Toledo	3.8
Lowell	2.6	Baltimore	4.0
Newark	2.7	Tacoma	4.0
Philadelphia	2.7	St. Louis	4.2
Hartford	2.8	Omaha	4.4
Seattle	2.8	Richmond	4.4
Cincinnati	2.9	Pittsburgh	4.6
Oakland	3.0	Kansas City Mo	4.9
Worcester	3.1	Detroit	5.0
Salt Lake City	3.2		
Second Rank (from 5.0 to 10.0)			
Wilmington Del	5.1	Youngstown	
Washington D C	5.2	Norfolk	
Indianapolis	5.4	Kansas City Kan	
San Antonio	5.6	Houston	
Camden	5.7	Fort Worth	
Spokane	5.7	Louisville	
Dallas	5.8	Memphis	
New Haven	5.8	Reading	
Denver	5.9		
Third Rank (from 10 to 20)			
New Orleans	10.2	Trenton	
Atlanta	10.9	Nashville	
Birmingham	12.5		

rounding the large cities of this country should be a matter of concern for city officials. In some instances the prevalence of typhoid in the neighborhood of the city is now receiving attention, since it is apparent that such foci not only swell unduly the number of imported typhoid patients in city hospitals, but also serve as genuine centers of infection for the city population through contamination of milk and other foods destined for city consumption.

There is not much to be gained this year by comment on comparative records of individual cities. The 1922 rates are in nearly every case so low that comparison with the preceding year, or in most cases with one

TABLE 9—AVERAGE DEATHS FROM TYPHOID PER HUNDRED THOUSAND IN EACH GROUP 1916 1917 1918 1919 1920 1921 AND 1922

Group	Year	No. of Cities	Total Population	No. of Typhoid Deaths	Average Deaths per 100,000
1	1916	9	13,743,746	851	6.1
1	1917	9	14,027,263	774	5.5
1	1918	9	13,809,901	598	4.3
1	1919	9	15,019,516	463	3.1
1	1920	12	16,526,740	460	2.8
1	1921	12	16,851,750	460	2.7
1	1922	12	17,037,727	441	2.5
2	1916	10	4,653,281	344	8.5
2	1917	10	4,150,099	319	7.9
2	1918	10	4,372,058	298	6.8
2	1919	10	4,511,181	204	4.5
2	1920	9	3,463,760	141	4.1
2	1921	9	3,498,83	174	4.9
2	1922	9	3,540,856	151	4.2
3	1916	10	2,635,953	248	9.4
3	1917	10	2,701,079	113	6.4
3	1918	10	2,773,716	103	6.0
3	1919	10	2,839,021	134	4.7
3	1920	12	2,651,373	141	4.8
3	1921	12	2,690,911	118	4.8
3	1922	12	3,047,957	112	3.6
4	1916	14	2,450,991	330	14.7
4	1917	14	2,316,372	307	13.3
4	1918	14	2,449,737	331	13.5
4	1919	14	3,664,400	210	8.5
4	1920	10	1,077,641	135	5.0
4	1921	10	1,740,800	143	8.2
4	1922	10	1,811,811	101	5.6
5	1916	17	1,988,018	235	11.8
5	1917	17	2,081,818	220	11.5
5	1918	17	2,088,915	240	11.5
5	1919	17	2,100,10	115	5.5
5	1920	7	954,456	46	4.8
5	1921	6	1,131,181	0	0.0
5	1922	6	1,233,044	35	2.8
Total	1916	80	27,667,910	3,711	13.4
Total	1917	80	25,220,076	3,111	12.3
Total	1918	80	25,458,656	2,711	10.7
Total	1919	80	27,088,529	2,011	7.4
Total	1920	80	27,350,000	1,811	6.6
Total	1921	80	28,291,450	1,711	6.1
Total	1922	80	28,644,655	1,611	5.6

city hospitals are deducted from the total. This information on this point is not a recognized source of information that the existence of typhoid in the city

since these summaries were undertaken, there is no city in the fourth rank with a rate over 20. There are, indeed, only five cities with a rate over 10, as compared with nineteen cities of the third rank as late as 1917.

Southern cities have shared in this typhoid decrease along with the cities in the Northern states. Baltimore and Richmond have rates of 4.0 and 4.4, respectively. San Antonio and Dallas report much lower rates for 1922 than for 1920 and 1921. Nashville, which has the highest rate of any city, is in a region in which typhoid is apparently particularly prevalent, the state of Tennessee being debited by the U. S. Census Bureau with the highest typhoid rate in 1921 of any registration state. It is difficult, with typhoid-infested surroundings, for any community to keep reasonably free from typhoid infection. A great improvement has been effected in Nashville in spite of these disadvantages. The average rate was over 40 from 1911-1915, so that 16.2 in 1922 appears relatively low. It may be confidently anticipated that still further improvement will be effected in this city.

Trenton reports the highest typhoid rate for any Northern city, and finds itself in the third rank, having for its only companions four Southern cities with a large negro population, and surrounded by rural areas.

TABLE 10—TOTAL AVERAGE TYPHOID DEATH RATE (1910-1921)

	Total Population (57 Cities)*		Typhoid Deaths	Typhoid Death Rate per 100 000
	Estimated by the U S Census Bureau Methods			
1910	20 996 035	4 114	19 59	
1911	21 545 014	3 391	15 74	
1912	22 093 993	2 775	12 56	
1913	22 642 972	2 892	12 77	
1914	23 191 951	2 408	10 38	
1915	23 740 930	2 038	8 71	
1916	24 205 359	1 842	7 61	
1917	24 740 068	1 647	6 65	
1918	24 971 278	1 557	6 23	
1919	25 526 186	987	3 87	
1920	26 154 013	921	3 52	
1921	26 561 469	978	3 68	
1922	26 936 843	851	3 15	

* Twelve cities are omitted from this summary because data for the full period are not available.

in which typhoid is far more prevalent than in the neighborhood of Trenton. Trenton and Reading might perhaps profit by an antityphoid campaign. Is there any reason why these cities should have consistently higher typhoid rates than Paterson and Scranton? A few cities seem to have suffered in 1922 from small special outbreaks. Kansas City, Mo., although its total rate is not high, had some milk-borne typhoid, and Washington, D. C., experienced an outbreak attributed to food eaten at a church supper which caused the illness of forty-four persons, and the death of one.

As appears in Tables 8 and 10, the year 1922 marks the lowest point yet reached in the typhoid record of the large cities of the United States. The slight check that occurred in 1921 to the almost steady decline of twelve years has been followed, as we predicted last year by a further decrease. Compared with 1921, forty-six cities showed a diminished and only twenty-three an increased typhoid rate. It does not seem oversanguine, knowing what we do of modes of typhoid dissemination, to believe that city typhoid rates will decline still further. We are certainly not manufacturing typhoid carriers in the United States as abundantly as we were fifteen years ago.

THE CARE AND FEEDING OF INFANTS

(Continued from page 627)

[NOTE.—This is the tenth of a series of articles on the care and feeding of infants. It is addressed to the general practitioner rather than to the pediatric specialist. When completed, the series, somewhat elaborated, will be reprinted in book form.—Ed.]

SUMMARY OF QUANTITATIVE AND CALORIC RELATIONSHIP OF THE FOOD CONSTITUENTS

In the diet recommended as a *minimum* for the average normal infant on a diet of cow's milk with added carbohydrates, namely, per pound, milk 1½ ounces, sugar 1/10 ounce and starch 1/60 ounce, or per kilogram, milk 100 c c, sugar 6.6 gm and starch 1.1 gm, the distribution of ingredients would be as in Table 11.

TABLE 11—INGREDIENTS IN MINIMAL DIET

	Proportion of Amounts			Distribution of Calories		
	Per Pound Grams	Per Kilo gram Grams	Per Cent	Per Pound	Per Kilo gram	Per Cent
Fat	1.8	4.0	20.5	16.74	37.2	37
Protein	1.5	3.5	17	6.15	14.35	14
Sugar { in milk	2.0	4.5	62.5	22.55	49.61	49
added	3.0	6.6				
Starch	0.5	1.1				
Calcium oxid	0.08	0.176				
Total				45.44	101.16	

The ratio of the amounts of the components of the diet, when expressed in percentages, shows fat, 20.5, protein, 17, carbohydrate, 62.5, that of the caloric distribution of the ingredients is fat, 37, protein, 13.5, carbohydrate, 49.5.

The *amount* of fat in the diet, therefore, slightly exceeds the protein, while the carbohydrate is somewhat more than three times the fat or protein.

The *caloric value* of the diet, however, shows that the fats are about two and one-half times the protein, while the combined fat and protein calories about equal the carbohydrates.

Holt,⁴⁰ in studying the diets of a series of 106 children, ranging in ages from 1 to 18 years, found that the average percentage distribution of the food intake in calories was fat, 35, protein, 15, carbohydrate, 50.

TABLE 12—CALORIES IN FAT, PROTEIN AND CARBOHYDRATES

Fat	1 gram = 9.3 calories
Protein	1 gram = 4.1 calories
Carbohydrate	1 gram = 4.1 calories

The combined calories of food elements usually recommended for the normal infant average 45 for each pound, or 100 calories for each kilogram body weight. Clinical experience leads me to recommend this amount as the *minimum required* by the average artificially fed infant of the second month (see caloric needs). The greater needs of the individual infant for growth are to be met by increasing the total food given or such of the ingredients as may be indicated. Only under exceptional circumstances should the suggested proportions be deviated from to any considerable amount, and then only through the reparation stage if normal development is to be expected.

NUMBER OF FEEDINGS IN TWENTY-FOUR HOURS

Four-Hour Intervals.—It has been proved that the usual cow's milk mixtures fed to infants do not leave

⁴⁰ Holt, L. E. Food, Health and Growth. New York: the MacMillan Company, 1922.

the stomach completely for at least three hours after ingestion. Most normal infants will be satisfied when placed on suitable mixtures at four-hour intervals. For several years, normal infants have been fed successfully on four-hour periods. The most suitable hours are 6 and 10 a. m., and 2, 6 and 10 p. m., with a 2 a. m. feeding if necessary. Most infants will be satisfied with five feedings daily from birth.

Three-Hour Intervals—If the three-hour interval is indicated, one should begin with seven feedings in twenty-four hours for the first month (6, 9, 12, 3, 6, 10, 2), six feedings during the second and third months (6, 9, 12, 3, 6, 10), and five feedings by the fourth to the fifth month (6, 10, 2, 6, 10), according to the individual need.

Premature and delicate infants having a tendency to vomit, as such cases are exceptions, may be fed smaller amounts more frequently, even at two-hour intervals, if indicated. In case catheter feeding is necessary, the longer interval will usually suffice.

Water to Be Added—It is most important to remember that young infants require a minimum of one fifth of their body weight of fluids daily (3 ounces per pound), and in their later months at least one sixth of their body weight ($2\frac{1}{2}$ ounces per pound) daily.

For the average normal infant, the amount of water to be added to the mixture is calculated by estimating that young infants, after their first few weeks of life, should be given 3 ounces of fluid daily per pound (200 c.c. per kilogram) of body weight, and older infants $2\frac{1}{2}$ ounces. The difference between the total fluids required by the infant for a day's feeding, and the amount of milk fed, equals the amount of water to be added. The food mixture is divided into equal portions, the number of which will vary with the feeding interval. Infants having a tendency to vomit usually have to be limited to $2\frac{1}{2}$ ounces of fluid per pound of body weight.

Underweight infants will require a total of fluids approximately 3 ounces, or at times even more per pound of body weight. Very fat infants will often be satisfied with somewhat less water than suggested.

After the fourth month, the average infant will take at least one quart of the food mixture daily. By this time a mixed diet may be instituted by adding a well cooked cereal to one or two of the day's feedings.

After the sixth month, four meals of 8 ounces each of a milk mixture may be given, and a fifth meal of a vegetable broth may be added. *Mixed feeding will be discussed more fully under Additional Foods.*

It has been found that a concentrated milk mixture does not disturb the infant's digestion when the milk is boiled, when cereal waters are used as diluents, or when it is alkalinized by the addition of sodium citrate or lime water.

Carbohydrates to Be Added—Having the necessary amount of milk and water, we ascertain the amount of carbohydrates to be added. Cane or milk sugar will satisfy the needs of the average normal infant during its first month when added in amounts of one-tenth ounce (3 gm.) per pound. Somewhat more than twice this quantity (66 gm.) should be added per kilogram of body weight to the day's mixture. Cane sugar mixtures are occasionally refused by infants when large amounts are added because they are too sweet. In such cases, part of the sugar can be replaced by milk sugar or maltose-dextrin compounds.

After the infant is 1 or 2 months old, from one-sixtieth to one-thirtieth ounce (0.5 to 1 gm.) of cereal or cereal flour for each pound of body weight may be added to the mixture. This is best given as cereal water. The addition of the second carbohydrate often has a very beneficial effect on the weight curve.

In underweight infants, the amount of sugar to begin with should be calculated on the basis of the existent weight, approximating the quantity needed for a full-weight infant as rapidly as the sugar tolerance permits.

Table 13 gives equivalents of 1 ounce by weight and the domestic measures of carbohydrates used in the artificial feeding of infants.

TABLE 13—EQUIVALENTS OF AN OUNCE

	By Weight		By Measure	Spoonfuls, Levelled with Knife		
	Ounce	Gm.	Ounces	Table	Dessert	Tea
Cane sugar	1	30	1 00	2	3	6
Milk sugar	1	30	1 50	3	4 5	9
Maltose dextrin	1	30	1 50	1	4 5	9
Flour (wheat)	1	30	2 25	5	7 5	15
Flour (barley)	1	30	1 50	3	4 5	9
Barley (pearl)	1	30	2 50	5	8	15
Oats (rolled)	1	30	2 50	5	8	15

1 tablespoonful = 15 dessertspoonfuls = 3 teaspoonfuls

To Break the Curd to Assist Digestion of Cow's Milk—Many infants can digest raw cow's milk. When it is not well digested, the formation of large protein curds is obviated by boiling the milk from two to three minutes over the flame or, better, by putting it in a double boiler and heating it until the water in the outer vessel boils eight minutes. Although the curd is less finely divided by the use of the double boiler as compared with boiling over the direct flame, it answers the purpose for most infants and causes fewer changes in the milk. A small double boiler should be used, as in it the column of milk is deep and has a small surface. The milk should simmer rather than boil actively, and in the larger vessel boiling takes place more readily. Milk that has been simmered undergoes less change in taste than that which has been actively boiled and there is less loss of soluble protein, fat, sugar and salts.

The feeding of raw diluted cow's milk has certain unquestionable advantages, however, when its source is in any way doubtful or its subsequent handling is likely to have led to contamination, it should be either pasteurized or boiled.

Cereal water diluents cause the formation of fragile curds. Addition of sodium citrate to the milk mixtures also prevents the formation of hard protein curds. Sodium citrate may be prescribed either in 5-grain tablets, approximately one-half to 1 grain being added for each ounce of the milk mixture, or a prescription may be so written that each teaspoonful of the prescribed formula will contain sufficient sodium citrate for the day's food.

When lime water is added to cow's milk until it is neutral or faintly alkaline to phenolphthalein a basic calcium casein is formed which is not acted on by rennet and will not form a curd even in the presence of lime salts (Van Slyke). Lime water is commonly used in amounts equaling 5 per cent of the milk in the mixture (1 ounce to 20 ounces of milk). In most instances no advantage is gained by adding alkalis to boiled milk mixtures. Occasionally the addition of sodium citrate or lime water to boiled milk will be found of advantage in cases of difficult feeding and in vomiting.

(To be continued)

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SATURDAY, MARCH 10, 1923

THE STATUS OF EPIDEMIC ENCEPHALITIS AS AN INDEPENDENT DISEASE

From the spring of 1920 until recently, there have been comparatively few new cases of epidemic (lethargic) encephalitis in North America, and interest in it has been kept up mainly by the surprising array of its somatic and psychic sequels. Within the last few weeks, however, reports have come of a large epidemic in Winnipeg, and smaller ones in Connecticut and elsewhere. Since 1917, nearly 2,000 articles on this disease have appeared, and, within the last two years, four comprehensive reviews in book form.¹ In addition, the French investigator Levaditi has written a book giving a comparative epidemiologic, pathologic and clinical study of the three closely related acute infectious disorders of the nervous system: encephalitis, poliomyelitis and herpes.²

The etiology of both acute encephalitis and poliomyelitis remains unsettled. The champions of the "globoid bodies" of Loewe, Hirschfeld and Strauss, and those of the streptococcus, have not yet agreed among themselves, or succeeded in convincing the majority of investigators to accept any exclusive view. It is agreed that the disease is caused by a microbe having a minute filtrable form that permits transmission by means of the filtrable virus to animals. It seems proved also that the virus exists in the nasopharynx, that the disease is mildly contagious, and that the usual period of incubation is ten days. No one now regards seriously the view of the English epidemiologist Crookshank that epidemic encephalitis and poliomyelitis are caused by the same virus or variations of the same virus. The relationship between influenza and encephalitis is most difficult to define. It does not seem reasonable that the appearance of the two diseases in epidemic form at the same time now and in the past can be a mere coincidence. There must be some connection, but

what is it? Encephalitis is certainly not a mere sequel of influenza, as most victims of the former do not give a history of having had the latter. Nor do encephalitis patients present the leukopenia and tendency to a peculiar form of pneumonia so characteristic of influenza. Furthermore, there is a form of encephalitis directly connected with influenza, which differs from the epidemic form in being more sudden and severe in its onset, and in having more severe and permanent focal symptoms, more signs of a complicating meningitis, and a marked tendency to multiple minute hemorrhages in the brain and sometimes to suppuration. Economo has suggested that the encephalitis virus requires activation by that of influenza, and it has also been thought that the damage to vessel walls caused by previous influenza renders a person more susceptible to encephalitis. Another theory, which at least cannot be said to have been positively disproved, is to the effect that encephalitis is caused by a highly neurotropic influenza virus. Stern offers the broad hypothesis that encephalitis is caused by a filtrable virus, which exists in a harmless form in the saliva of many persons, and may be activated not only by the influenza virus, but also by pneumococci, streptococci and other bacteria.

While, as yet, we have no proof of a specific causative virus, the nosologic independence of epidemic encephalitis appears proved when, following Stern, we assemble the main features. First, the clinical ones: (1) the prominence of somnolence, transient cranial nerve palsies, and atonic or hypertonic extrapyramidal motor disturbances (choreic and parkinsonian types), (2) the rarity of certain symptoms that are frequent in other forms of encephalitis, such as those indicative of destructive upper motor neuron lesions, as well as convulsions and anesthetics, (3) the relative frequency of "central" pains, sympathetic disturbances, especially salivation, and certain pseudospontaneous motions and disorders of respiratory rhythm, otherwise more commonly seen in psychogenic disorders than in organic disease, (4) the tendency to frequent variation in the grouping of symptoms in different epidemics and localities, (5) the presence of a chronic progressive form. To these we may add (6) the possibility of the development, after a free interval of years, of a progressive "para-encephalitic disease," analogous to the late nervous manifestations of syphilis. This usually is of a parkinsonian type, and may follow in the wake of an acute illness so mild that its nature becomes established only by the character of the subsequent symptoms.³

Anatomically, we have these principal features: (1) the insignificance of the gross changes, (2) the rarity of thrombosis and necrosis, (3) the lymphocytic character of the perivascular infiltrations, (4) the predilection of the inflammation for certain regions of the basal ganglia and brain stem.

¹ Acute Epidemic Encephalitis. An Investigation by the Association for Research in Nervous and Mental Disease. New York, 1921. Encephalitis Lethargica. Reports on Public Health and Medical Subjects, No. 11. London, 1922. Achard, Charles. L'encephalite lethargique. Paris, 1921. Stern, Felix. Die epidemische Encephalitis. Berlin, 1922.
² Levaditi, C. Ectodermes neurotrofes: poliomyelitis, encephalitis. Paris, 1922.

³ This aspect of the encephalitis problem was discussed by B. J. Peter. The Diagnosis of Epidemic Encephalitis. J. A. M. A. 79: 2223 (Dec. 30) 1922.

Much work has been done on the spinal fluid, and the views, at first quite divergent, have become crystallized. There is no pathognomonic feature, but there are two fluid "syndromes," thus defined by Eskuchen⁴ (1) lymphocytosis, globulin increase, luetic gold curve, increased sugar, (2) cell-globulin "dissociation," with relative increase in cells, luetic gold curve, increased sugar.

On the whole, the most valuable work in the last two years relates to the sequels, mental and physical, the number and variety of groupings of which are most surprising and bewildering, bringing new and unexpected problems in differential diagnosis. Postencephalitic states are easily confused not only with paralysis agitans and chronic choreas, but also with dementia praecox, general paresis, multiple sclerosis and brain tumor. Especially in children, in the absence of history, behavior disorders and other mental disturbances may lead to a wrong diagnosis of imbecility, "moral insanity," or plain, unaccountable wickedness.

ALIMENTARY GASES

Distention of portions of the alimentary tract by gases that fail to be absorbed or discharged from it is a familiar manifestation. Not infrequently it is a condition sufficiently distressing to call for special treatment to secure relief, consequently, some appreciation of the etiology of the accumulation of gases is desirable. The kinds of the latter that have at times been reported as occurring in different regions of the gastro-enteric tract are varied, including oxygen, nitrogen, carbon dioxide, methane and hydrogen sulphid. It has long been recognized that part, at least, of the occluded gases are derived from air swallowed or inevitably entangled in the meshes of ingested food. Part may be, and doubtless is, derived from fermentative changes in the enteric contents. Furthermore, it has been realized that diffusion must go on between the contents of the alimentary tube and its environment of blood and tissue fluids, to a greater or lesser extent.

Does the character of the residual gases determine some of the symptoms they may initiate? Such a question might be asked in connection with the belching so commonly noticed in patients. Before this widespread phenomenon is attributed offhand to pressure, to gastric "neurosis"—whatever that may be—or to reflex changes, it is worth while to consider the character of the gases concerned. Several years ago, Ylppö⁵ found that atmospheric air, as such, disappeared from the stomach in from forty to sixty minutes, and that the residue had a rather constant oxygen-carbon dioxide ratio, which approximated that of blood gases. In general harmony with this is the recent study of Dunn and Thompson⁶ of Omaha. They, too, found that atmos-

pheric air introduced into the stomach tends to come into equilibrium with the blood gases within one hour in the case of carbon dioxide, and considerably later, if at all, in the case of oxygen. All the carbon dioxide found in the stomach gas of normal persons, whether during fasting or after a full meal, can be accounted for by secretion or diffusion from the gastric mucosa. Although stomach contents devoid of "free" hydrochloric acid usually show evidence of fermentation with gas production, the presence of such acidity virtually precludes the production of carbon dioxide by fermentation. Consequently, the latter process can have little to do with the carbon dioxide content in the stomach gas of normal persons. As Dunn and Thompson reemphasize, the gaseous interchange in the stomach is a fundamental physiologic process governed by fixed laws.

This subject bears a relationship to the phenomenon of aerophagy, in which the repeated swallowing of air is followed by eructations of gases from the stomach. It is far from enlightening to dismiss this unique behavior as the manifestation of a neuropathic reaction. When patients suffering from cardiac or gastric disease experience relief after belching gas, they are tempted to repeat the process. To do so they must swallow more air. A study of aerophagy in the light of accurate gas analyses, Dunn and Thompson remark, may reveal "a cause of more compelling therapeutic interest for this unpleasant symptom complex than that which allows it to be viewed in the yellow light of 'neurotic perversity'."

LIPEMIA IN DIABETES

It is an established fact that many diabetic patients exhibit not only a hyperglycemia but also an undue content of fat in the circulating blood—a lipemia. The latter has not received the amount of attention that has been given the abnormal level of the blood sugar, presumably because the latter usually discloses itself by a coincident glycosuria, and the fat estimations require a well trained analyst. If diabetes is to be interpreted as a derangement not only of the carbohydrate metabolism but also, in the severer cases, of the behavior of fat and protein in the chemical transformations of the organism, treatment may become a problem of adjusting the diet to the tolerance of the organism for each of the great classes of foodstuffs. For this reason the advocacy of a low protein, low carbohydrate, high fat diet by Newburgh and Marsh¹ has provoked considerable debate.

Ketosis is commonly regarded as an indication of inadequate metabolism of fats. It is a common manifestation of severer types of diabetes. If the high fat diet reported to be successful in the hands of Newburgh and Marsh does, in fact, allow the patients to

⁴ Eskuchen, Karl. *Ztschr. f. d. ges. Neurol. u. Psychiat.* **76**: 568 1922.

⁵ Ylppö, A. *München med. Wchnschr.* **G3**: 1650 1916.

⁶ Dunn, A. D., and Thompson, Warren. *The Carbon Dioxide and Oxygen Content of Stomach Gas in Normal Persons*. *Arch. Int. Med.* **31**: 1 (Jan.) 1923.

¹ Newburgh, L. H., and Marsh, P. L. *Use of a High Fat Diet in the Treatment of Diabetes Mellitus*. *Arch. Int. Med.* **26**: 6 1920.

become free from excretion of ketone substances, the circumstance should be reflected in a reasonably low content of blood fat. Bloor,² who has had a large experience in this field, regards lipemia in any event as a disturbance in the balance between inflow and outflow of fat in the blood. He assumes that diabetic lipemia represents an abnormally slow outflow.

It has become important, therefore, to ascertain by direct observation whether the mechanism for the utilization of fats breaks down in any way under the Newburgh-Marsh diabetic regimen. Blatherwick³ has observed that patients with mild and moderate diabetes living on diets similar to those recommended by Newburgh and Marsh are apparently able to utilize satisfactorily large amounts of fat, as indicated by constancy of the blood fat level and by the absence of acetone substances in the urine. More recently, Marsh and Waller⁴ have published records of diabetic patients on the same type of high fat diets in whom there was no increase in the lipid content of the blood during the periods of observation. In fact, in some of those showing a hyperlipoidemia when first examined the total fat fell to approximately normal levels. Hence Marsh and Waller conclude that the prevalent view, which assumes that diabetic hyperlipoidemia is dependent on the excessive ingestion of fat, is unwarranted. The explanation of this phenomenon must be sought in some other unusual feature of the diabetic state.

THE THERAPY OF CERTAIN FUNCTIONAL NERVOUS DISTURBANCES

The treatment of headache or migraine, like that of fatigue, mental lethargy, and the whole complex of neurasthenia, is admittedly unsatisfactory. The reason for this lies primarily in our ignorance of the genesis of these clinical disturbances. There seems to be a crying need of immediate further studies in this field of medical research. The failure of clinical medicine to make satisfactory progress in the management of certain types of functional nervous disturbances justifies us in giving a respectful hearing to any reasonable proposal. In this spirit, reference may be made to the suggestions of Pemberton⁵ that many forms of neurasthenia, headache, migraine, most cases of neuritis, certain types of mental depression and melancholia—possibly a few supposedly organic conditions—are the result of interruptions in a chain of metabolic processes. Such statements, like the frequently made claim of "suboxidation" or "impaired oxygen" as a cause of disease mean nothing unless they can be substantiated

by some sort of evidence that may be subjected to critical evaluation. Pemberton has been impressed by the similarity of the conditions mentioned to the neuropsychiatric symptoms observed in arthritic patients. He therefore assumes similar underlying causes, and since the treatment of many cases of arthritis from the standpoint of the existence of metabolic upsets has been favorable in his hands, Pemberton advocates an analogous procedure in the relief of the less complicated disturbances of the nervous functions.

For the conditions described, lowered sugar tolerance and changes in equilibrium of the blood gases and in the content of certain other constituents of the circulating medium have been among the features detected by laboratory examinations. These have been interpreted to be due to metabolic errors involving some phase of local or general oxidative functions. Treatment is therefore directed toward the relief of such conditions. As Pemberton expresses it, part of the metabolic process apparently concerned is, broadly speaking, oxidative in nature. In this is included the delivery of oxygen, the removal of the products of combustion, or both. Interruption of the normal course of events may be due to a large number of factors, among which are external physical conditions, the endocrine system, focal infection, malfunction of various viscera, and various metabolic insults. Appreciation of the general nature of this disturbance makes possible the stimulation of metabolic functions by a variety of measures, on the one hand, and adjustment of the metabolic load, on the other. A combination of the two measures is sometimes helpful or necessary.

One of the ways of "adjusting the metabolic load" is through the path of economy in diet. The load may be lightened by a reduction in food intake, often with success, as has been reported in the treatment of arthritis. Another scheme consists in the use of hydrotherapy or external application of heat, measures often attempted without much consideration of what they may actually bring about in the organism. In a recent issue of *THE JOURNAL*, Pemberton and Crouter⁶ have indicated that the percentage oxygen saturation of the peripheral blood tends to rise with increased local or body temperature when this is caused by external heat. It was found that during electric "bakes" the sweat almost invariably changes its hydrogen-ion concentration or "reaction," whatever this may have been at the start. It is generally about neutral at the outset, but becomes more alkaline or less acid as the bake progresses. This is merely a hint of deeper seated physiologic changes.

It would be rash, indeed, to expect to find a panacea for nervous ills in any specific form of physical therapy or dietotherapy, but there can be no harm in pointing to suggested possibilities.

² Bloor, W. R. Lipemia. *J. Biol. Chem.* **49**: 201 (Nov.) 1921.
Blatherwick, N. R. Observations on Blood Fat in Diabetes. *J. Biol. Chem.* **49**: 193 (Nov.) 1921.

⁴ Marsh, P. L. and Waller, H. G. The Relation Between Ingested Fat and the Lipemia of Diabetes Mellitus. *Arch. Int. Med.* **31**: 63 (Jan.) 1923.

⁵ Pemberton, Ralph. The Nature of Certain Functional Nervous Disturbances and Their Treatment Along Metabolic Lines. *Arch. Neurol. & Psychiat.* **9**: 208 (Feb.) 1923.

⁶ Pemberton, Ralph and Crouter, Caroline Y. The Response to the Therapeutic Application of External Heat. *J. A. M. A.* **80**: 257 (Feb. 3) 1923.

THE FORMATION OF GALLSTONES

The current hypotheses regarding the formation of gallstones are numerous and somewhat discordant. A simple concentration of bile cannot be the foremost cause of concentration formation, for the secretion of the liver can be desiccated to a considerable extent without necessarily leading to the precipitation of less soluble constituents from the somewhat inspissated fluid. Of late we have been taught to believe that concentration of the bile in the gallbladder is a common physiologic phenomenon incident to the temporary storage of the secretion there. It would strain our belief in the fitness of nature to assume that the organism would commonly avail itself of a process easily liable to bring about deposition of bile constituents and consequent calculus formation. Increased concentration of cholesterol, bile pigments or calcium salts may well be contributing factors in the pathogenesis without being direct causes of cholelithiasis.

It is commonly taught, therefore, that infection of the biliary tracts usually plays a significant part in cholelithiasis. While the possible importance of the bacterial factor cannot be denied, there are evidences that infection is not the sole disturbance that may lead to the precipitation of bile constituents. It has been shown that a sterile thread inserted into the gallbladder may become encrusted with the calcium salts of the bile pigments, even though the organ remains free from infection. New demonstrations have been furnished recently by Rous, McMaster and Broun¹ of the Rockefeller Institute for Medical Research. They have observed calculus formation in the walls of tubes of rubber and glass adjusted under sterile conditions to collect bile from experimental animals. The stones were never present in the ducts themselves, and they did not occur when the collecting systems remained clear of organic debris, such as dead cells and mucus.

In the experiments just related, the stones were made up of calcium bilirubinate and calcium carbonate, with a scaffolding of organic material. Cholesterol was not demonstrable in them. The majority had a center of calcium bilirubinate surrounded by an envelop of crystalline, slightly pigmented carbonate, but stones consisting almost wholly of one or the other substance were encountered. Frequently a number of pigment stones were secondarily united in a matrix of carbonate. The relation of the calculi to the organic debris associated with them differed significantly. Those formed primarily out of carbonate originated in the midst of lumps of the debris, as the microscope showed, whereas the minute pigment stones were so situated as to suggest that they, or their original nuclei, had once been free in the bile, but had been caught in the debris and retained. Some of the pigmented

calculi were large and of such shape as to leave no doubt that deposition had occurred on them in situ.

In those cases in which infection does play a determining part in gallstone formation, it seems to act, according to Rous and his co-workers, by damaging the duct walls with resulting desquamation, and by lessening the ability of the bile channels to rid themselves of the cell debris. The latter induces, or furthers, the direct deposition of solids, and may catch and retain potential nuclei for stone formation, in the shape of pigment particles from higher up in the biliary system, which would under ordinary circumstances be voided with the bile. It should be recalled that the sterility of a hollow viscus or duct is maintained in large part by its free evacuation. Any stasis produces conditions favoring the growth of micro-organisms that may happen to lodge behind an obstructing mass. Secondary infections, sometimes due to an escape of bacteria into the bile from the liver, may lead to new gallstones or new layers of old ones. Indeed, it has been asserted that many of the more serious consequences of cholelithiasis are due to such infections rather than to the mechanical effects of the biliary calculi.

Current Comment

FUMIGATION WITH HYDROGEN CYANID

A deadly poison in the hands of a person not fully aware of the danger inherent in it or lacking intelligence and skill to guard against the hazard, is as much to be feared as dynamite. Manufacturers and distributors of such poisons who entrust them to ignorant and unskilled persons should be held jointly responsible with the users for the consequences. A community that permits the sale of a deadly poison to any adult who represents that it is to be used for a lawful purpose, without requiring him to show that he knows how to safeguard against danger inherent in its use must hold itself, too, responsible for the results. And communities, manufacturers, distributors and users may

¹ Rous, Peyton, McMaster, P. D. and Broun, G. O. The Experimental Production of Gall Stones in Dog in the Absence of Infection. Stasis and Gall Bladder Influence upon the Bile, *Proc. Soc. Exp. Biol. & Med.* 20: 128, 1922.

lives. One man escaped, who happened to sleep, fortunately, near an open window. Hydrogen cyanid has been extensively used in the disinfection of ships, grain elevators, greenhouses and storage warehouses, and in army camps. Always the strictest precautions have been used, and recently those engaged in the work and liable to come within range of the fumes have been equipped with gas masks. To a certain extent, hydrogen cyanid has been used for the disinfection of dwelling houses and apartments, possibly more frequently than has been commonly recognized, for often the extermination of insects is undertaken on a commercial basis by persons who do not disclose the nature of the methods used. Here and there, a community, possibly awakened by a tragedy such as has just occurred in Chicago, has passed regulations to safeguard its people against such dangers, but generally, beyond limiting the sale of such deadly poisons as sodium cyanid and hydrocyanic ("prussic") acid to adults buying them for lawful purposes, no restrictions have been imposed. The seriousness of the situation is shown with tragic force by the accident in Chicago. The health authorities of the country should recognize the danger and take precautions against it, without waiting for deaths to occur within the communities which they serve.

THE ACTION OF DRUGS ON RESPIRATION

The remarkable coordination of the activities that characterize the phenomena of respiration has been one of the features responsible for the belief in the existence of a respiratory center in the medulla oblongata. Despite the usual exhibitions of function in which both inspiratory and expiratory muscles play their part in a well adjusted rhythm, every-day experience teaches that a certain degree of independence must exist between the two antagonistic phases of the respiratory act. In coughing, for example, the expiratory factor becomes greatly exaggerated. One mode of treatment consists in an attempt to decrease the rate of respiration by the use of drugs, familiar illustrations being afforded by the effects of alkaloids of the morphin group supposed to depress the respiratory center as a conspicuous feature of their general depressant action on the central nervous system. In a series of unusually interesting researches in the Laboratory of Pharmacology at the University of Pennsylvania, Schmidt and Harer¹ have furnished cogent evidence, for certain species at least, that some drugs may depress expiration selectively, or at least depress expiration more than inspiration. It was found to be conspicuously true of morphin and diacetylmorphin (heroin) which are looked on almost as specific in their ability to relieve cough and to decrease the rate without affecting the depth of breathing. Various other depressants, such as ether, chloral hydrate and urethane, exhibit a marked tendency to make expiration passive without depressing inspiration, but usually they show this effect only in narcotic doses. Caffein

and strychnin antagonize the depression of expiration, atropin does not. It is too early to dwell on the details of these interesting observations. If, however, they should pave the way to a cogent demonstration of the existence of a separate central nervous mechanism for the control of each of the phases of respiration, a great step in advance will be recorded. Perhaps the present conception of a respiratory center will be replaced by that of a twofold organ, an expiratory center and an inspiratory center, the former set at a higher threshold for chemical stimuli than the latter. Practical therapy is eagerly awaiting new clues for the discriminating use of drugs that act on respiration.

INCOME TAX TRAVELING EXPENSES HELD NOT DEDUCTIBLE

The Commissioner of Internal Revenue has declined to reverse his ruling to the effect that the traveling expenses of a physician incident to attendance at a meeting of a medical society are not ordinary and necessary expenses incurred incident to the practice of medicine, and that they are, therefore, not deductible. Physicians are advised to file their returns without taking credit for any traveling expenses that they may have incurred by reason of attendance at such meetings. The ruling in this case seems so clearly inconsistent with the law and with the practice of the Bureau of Internal Revenue with respect to deductions for traveling expenses under other circumstances that efforts will be continued to obtain a review of the decision and its reversal.

Association News

THE SAN FRANCISCO SESSION

Scientific Exhibit

The following have been appointed on the Advisory Committee of the Scientific Exhibit: Dr. Charles C. Bass, New Orleans; Dr. Frank W. Hinman, San Francisco; Dr. W. T. Longcope, Baltimore; Dr. H. E. Robertson, Rochester, Minn.; and Dr. Rea Smith, Los Angeles. The Committee from the Board of Trustees consists of Dr. D. Chester Brown, Chairman; Dr. Frank Billings; and Dr. Wendell C. Phillips.

The Scientific Exhibit will be located on the main floor of the Civic Memorial Auditorium. The Registration Bureau, Information Bureau and Commercial Exhibit will be on the same floor, also the sections will meet in this building, so that here will be the center of activities.

The Committee on Scientific Exhibit is desirous that the exhibits shall be presented in a way which will emphasize their scientific value, this may be done by carefully worded explanatory placards and by personal demonstration. Also, the general attractiveness of the exhibit is very essential, and to aid in the appearance, the Committee on Scientific Exhibit will do its part by having the booths appropriately painted.

In connection with the exhibits there will be a motion picture theater for the exhibition of lantern slides and motion pictures.

Application forms may be obtained from the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago. The committee will make no assignments previous to May 1 in order that the amount of space available may be apportioned to the best advantage of all concerned. All applications must be received before this date.

¹ Schmidt, C. F. and Harer, V. B. The Action of Drugs on Respiration. I. The Morphine Series. *J. Exper. Med.* 37: 37 (Jan.) 1923.
II. Ether, Chloroform, Chloral, Urethane, Luminal, Magnesium, Caffeine, Strychnine and Atropine. *ibid.* 37: 69 (Jan.) 1923.

San Francisco Hotels and Rates

The following partial list of San Francisco's leading hotels has been submitted to THE JOURNAL by Dr W E Musgrave, chairman of the Local Committee of Arrangements. It will be noted that in certain instances it is stated definitely whether the rates apply to single or double rooms, while in

LEADING HOTELS OF SAN FRANCISCO (ALL EUROPEAN PLAN) THEIR LOCATION AND RATES

Hotel	Street Address	With Bath	
		Single	Double
Argonaut	4th and Market Sts	\$2 00-\$2 50	\$3 00-\$3 50
Baldwin	321 Grant Ave		3 00
Bellevue	Geary and Taylor Sts	3 50	5 00
Cartwright	524 Sutter St	2 50-3 00	3 00-4 00
Cecil	545 Post St	8 00	12 00
Chancellor	433 Powell St	2 50	3 50-4 00
Clark	217 Eddy St	2 00	2 50
Clift	Geary and Taylor Sts		8 00
Court	205 Bush St	3 00	4 00
*Fairmont	California and Mason		7 00-10 00
Federal	1087 Market St	2 50 3 00	3 50
Golden West	Powell and Ellis		3 00-4 00
Grand	57 Taylor St	2 00 2 50	3 00
Herberts (men only)	151 Powell St	2 00-3 00	
Keystone	54 Fourth St	2 50-3 50	
Lankershim	55 Fifth St		3 50
Larne	210 Ellis St		3 00-4 50
Manx	Powell and O Farrell		4 00-5 00
*Palace			8 00-10 00
Plaza	Post and Stockton Sts		5 00-6 00
Richelieu	Geary & Van Ness Ave	5 00 (single or double)	
Somerton	440 Geary St		2 00-4 00
St Francis	Union Square		4 00-10 00
Stewart	353 Geary St		3 50-7 00
Sutter	Sutter and Kearny Sts		4 00
Stratford	Powell and Geary		6 00
Turpin	Powell at Market St		3 00-3 50
Victoria	Bush & Stockton Sts		2 50-4 00
*Whitcomb	Market & Civic Center		4 00-8 00
Wiltshire	340 Stockton St		3 00-4 50

* Reservations all booked

other instances this information is not given in the list. It will also be noted that three hotels marked with an asterisk have already booked their capacities, and no further reservations are available. Those who wish to secure hotel accommodations at San Francisco may write direct to any hotel listed below or to Dr W E Musgrave, Chairman, Local Committee of Arrangements, 806 Balboa Building, San Francisco.

Invitation from Medical Society of Hawaii and Governor Farrington

The following telegram, transmitted by wireless to San Francisco and thence by usual telegraphic communication, has been received at the offices of the American Medical Association:

I am pleased transmit cordial invitation of Medical Society of Hawaii to Fellows and members American Medical Association visit Hawaii after Annual Meeting San Francisco. I trust large number your members be able accept. Farrington Governor Hawaii.

Steamship Service Between Los Angeles and San Francisco

Those who go by way of Los Angeles to the annual session may proceed from Los Angeles to San Francisco by steamship if they will stipulate when tickets are purchased that they read via the Los Angeles Steamship Company. No additional charge will then be incurred. The Steamships *Laurel* and *Harvard* of this company operate four times a week each way between San Francisco and Los Angeles, leaving Los Angeles at 4 p m every Tuesday, Wednesday, Friday and Sunday. Eighteen hours is required for the ocean trip from Los Angeles to San Francisco.

Special Train for Massachusetts Medical Society

A special tour for the Massachusetts Medical Society has been arranged under the direction of the Raymond and Whitcomb Company for the Fellows of that society and their

friends who will attend the Annual Session. Leaving Boston at 2 10 p m June 14, the Massachusetts party will go to San Francisco by way of Chicago, Colorado Springs, the Royal Gorge, Salt Lake City, Riverside, Los Angeles, Yosemite and Big Trees, reaching San Francisco, Sunday, June 24. The return trip may be made either by way of Portland, Seattle, Vancouver and the Canadian Rockies, or by the direct Overland route by way of Ogden, Omaha and Chicago. For more detailed information concerning this tour communicate with the Raymond and Whitcomb Company, 112 South Dearborn Street, Chicago, or 17 Temple Place, Boston.

ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE, PUBLIC HEALTH AND HOSPITALS

The annual congress met in the Florentine Room of the Congress Hotel March 5, at 9 30 a m, and was called to order by Dr Arthur Dean Bevan, chairman of the Council on Medical Education and Hospitals. Dr Louis B Wilson, Rochester, Minn., presented a report of the Committee on Graduate Medical Education. Dr E Stanley Ryerson, secretary of the Faculty of Medicine of the University of Toronto, presented a paper on 'Coordination of the Courses as a Means of Increasing the Efficiency of the Medical Curriculum'. Dr Arthur Dean Bevan presented a plan for revision of the medical curriculum. There was a full discussion. Dr Robert W Lovett, chairman, presented a preliminary report of the Committee on Trained Nursing and Dr Richard Olding Beard of Minneapolis presented a minority report for this committee.

At the afternoon session a paper by Dr H M Platter, secretary of the Ohio State Medical Board, was presented on the 'Enforcement of the Medical Practice Act'. Dr K C Babcock of the University of Illinois read a paper, 'Some Needed Revisions in Medical Licensure'. Dr Alexander Macalister discussed 'The Hospital Intern Year as an Essential for the License'. Dr C F Humiston discussed the new medical practice act for the state of Illinois.

At the session of Tuesday, March 6, the following paper were read and discussed:

Medical Education. 'The Danger of the Stereotyped Curriculum,' Dr Charles P Emerson, dean and professor of medicine of the Indiana University School of Medicine, Indianapolis. 'Present Ideals of the Physical Plant in Medical Education' (a) Dr Charles R Bardeen, dean and professor of anatomy of the University of Wisconsin Medical School, Madison, (b) Dr G Canby Robinson, dean, Vanderbilt University School of Medicine, Nashville, Tenn. 'The Art of Medicine,' Dr Irving S Cutter, dean, University of Nebraska College of Medicine, Omaha.

Hospital Service. Introductory remarks, Dr Frank Billings, president of the American Conference on Hospital Service, Chicago. 'The Role of Nonmedical Clinical Assistants in Hospitals, Without Interns,' Dr S S Goldwater, director and Dr W M Bluestone, assistant director, Mount Sinai Hospital, New York, discussed by Drs Charles P Emerson, John M Dodson and N P Colwell. 'Liability of the Hospital for the Acts of Its Servants,' John A Lapp, director, Department of Social Action, National Catholic Welfare Council, Chicago, discussed by Drs M L Harris and A R Warner. 'The Relation of the State University Hospital to the Medical Profession,' Dr C P Howard, professor of medicine, State University of Iowa College of Medicine, Iowa City, discussed by Drs Ray Lyman Wilbur, Irving S Cutter and C R Bardeen. Annual report of the Hospital Library and Service Bureau by the director, Miss Donelda R Hamlin, Chicago. A complete report of these sessions will appear in THE JOURNAL next week.

Statue of Jenner in Japan.—On the west coast of Japan in a small fishing town until recently very isolated and formerly ravaged by smallpox, there stands a monument to Edward Jenner, erected by a grateful people.—*Med Press* Feb 7, 1923.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALASKA

Medical Missionary Needed—It is announced by the director of educational work for the Presbyterian Board of Home Missions of New York that a medical missionary is urgently needed for Cape Prince of Wales.

ARIZONA

Date of State Medical Meeting Changed—The thirty-second annual meeting of the Arizona Medical Association will be held at Grand Canyon, June 21-22, instead of at Phoenix in April, as previously announced. The change was made so that the meeting would just precede that of the American Medical Association in San Francisco. Dr. A. L. Gustetter, Nogales, is president of the society, and Dr. D. F. Harbridge, Phoenix, secretary.

CALIFORNIA

Dr. Deacon Exonerated—Dr. George Deacon, Pasadena, who, it is alleged, was charged with administering narcotics to an addict, was exonerated by the state board of medical examiners at Los Angeles, February 14.

University Promotions—Twenty-five members of the faculty of Stanford University School of Medicine, San Francisco, have been given promotions, it was announced, February 21. The following associate professors have been promoted to professorships: Dr. Frank E. Blaisdell, surgery; Dr. John F. Cowan, surgery; Dr. Charles H. Danforth, anatomy; Dr. Ernest C. Dickson, medicine; Dr. Leonard W. Ely, orthopedics; Dr. Harold K. Faber, pediatrics. Assistant professors becoming associate professors are: Dr. W. Edward Chamberlain, radiology; Elmer E. Drew, physics; Dr. Ludwig A. Emge, obstetrics and gynecology; Dr. Henry G. Mehrtens, neurology; and Dr. Clelia D. Mosher, personal hygiene and medical adviser to women. Dr. Albert V. Pettitt, formerly instructor in obstetrics and gynecology, is now assistant professor.

CONNECTICUT

Epidemic (Lethargic) Encephalitis in Connecticut—The first cases of epidemic (lethargic) encephalitis in Connecticut were reported in 1919, the bureau of preventable diseases announces. There were forty cases reported in 1920, seventy-four in 1921, and forty-seven in 1922. Since January 1 of this year thirty cases have been reported. The increase in the number of cases this year it is said, may be due to an increased interest in the disease and more accurate diagnosis. Encephalitis was made reportable to the state department of health, Nov. 11, 1921.

ILLINOIS

Chicago

Cook County Medical Examiner Appointed—Dr. Frank J. Pokorney, Chicago, has been appointed medical examiner for Cook County, it was announced by the president of the board of county commissioners, March 3. Preparation of a county civil service eligible list and the necessity for examination by a physician of many of the applicants caused the appointment of Dr. Pokorney. All persons about to be retired from the county's service on pensions or because of disability will also be examined.

Tuberculosis Conference—The executive officers of the National Tuberculosis Association held a three day session at the Hotel LaSalle, February 26-28. It was stated there are 65,000 hospital beds available for tuberculous patients in the United States and that there are more than 1,000,000 cases of the disease. A standard system of home treatment teaching which would permit the discharge of a patient from the sanatorium in three months was outlined. A visiting service would care for the patient following his discharge. A total of \$5,000,000 was the goal set by the conference for 1923.

Hospital News—The campaign to collect two thirds of a million dollars which was necessary before one third of a

million left by the will of John P. Wilson, for the benefit of the Children's Memorial Hospital, could be secured, was successfully completed, March 3.—Work will soon start on the nurses' home to be erected by Michael Reese Hospital.—The cornerstone for the training school for home and public nursing at Monroe and Loomis streets, was laid, February 18. The building will also house free dental clinics for the children of Chicago. Money for this project was derived from the Pageant of Progress exhibitions.

INDIANA

Epidemic Bacillary Conjunctivitis—Reports from Gilead state that pink-eye is prevalent in the local schools. In some schools the incidence of the malady has been 100 per cent of the pupils.

Child Hygiene—The child hygiene division of the state board of health recently conducted a two weeks clinic in Clinton County. Lectures were given on child welfare, and moving pictures on health were shown in the public schools.

Dinner for Dr. Bloodgood—Dr. Joseph C. Bloodgood, Johns Hopkins University, Baltimore, was the guest of honor at a dinner given by the Terre Haute Academy of Medicine, February 2. Following the dinner Dr. Bloodgood gave a stereopticon lecture on "Cancer of the Breast."

Distribution of "Patent Medicines" to Be Stopped—The city health department of Indianapolis, of which Dr. Herman Morgan is secretary, is taking steps to stop the practice of distributing samples of patent medicines on porches of homes in Indianapolis. This practice is in violation of a city ordinance, which prohibits the distribution of samples of medicine, except by handing the samples directly to adults.

Personal—Dr. Charles J. McIntyre has been elected president of the Indianapolis Association for the Prevention and Relief of Heart Disease.—Drs. Noah H. Thompson and Walter A. Damer were hosts at a banquet for the members of the Wabash County Medical Society at the Indiana Hotel, Wabash, February 15.—Dr. William M. Varble, Jeffersonville, has been elected secretary of the board of health of Clark County to succeed the late Dr. David C. Peyton.

IOWA

University News—The medical library of Sir Norman Walker of Edinburgh University, Scotland, has been offered to the State University of Iowa College of Medicine, Iowa City, through Dr. Walter L. Biering, Des Moines. The gift has been accepted by the university. Sir Norman visited the university two years ago as a member of a commission of European physicians and surgeons and was favorably impressed by the medical work being done at the university.

Personal—Dr. John J. Lambert, professor at the State University of Iowa College of Medicine, won the golf championship of Iowa City and Iowa University recently on the Country Club links.—Dr. John J. B. Morgan, director of the psychology clinic in the State University of Iowa College of Medicine, Iowa City, addressed the twenty-third annual meeting of the Nebraska Conference of Social Workers at Omaha, February 12 on "The Menace of the Feeble-minded."—President Harding has dismissed Surg. Waldo H. Sanford, Colfax, from the U. S. Public Health Service, it is reported.

KANSAS

Physician Convicted of Murder—The Kansas Board of Medical Registration and Examination reports the revocation of the license of Dr. W. A. Nixon, Great Bend. He was convicted of murder in the first degree, and was sentenced to the state penitentiary at Lansing for life.

KENTUCKY

Health Board to Conduct Free Examinations—Free physical examinations will be given to many thousands in Louisville under supervision of the faculties of the medical and dental colleges of the University of Louisville. It was announced February 17, by Dr. Arthur McCormack, secretary of the state board of health following a joint meeting of the faculties, the deans of the colleges and representatives of the board of health. The work will be done through the cooperation of the university officials with the Jefferson County Medical Society and the county dental society. This is the first step in a movement to demonstrate to the public the importance of periodic physical examinations for everybody as a measure to reduce the death rate from preventable disease.

LOUISIANA

Hospital News—A state-wide campaign to collect \$400 000 for the Charity Hospital, New Orleans, will be inaugurated, May 12, National Hospital Day

MAINE

Androscoggin Sanatorium Reopened—The tuberculosis sanatorium owned by the Androscoggin Antituberculosis Association, used until recently by the federal government for the care of ex-service men has been reopened by the association for local use Dr Ralph Goodwin is the physician in charge

MARYLAND

Epidemic (Lethargic) Encephalitis to Be Investigated—Dr William T Howard, former assistant commissioner of health, and Dr John F Hogan director of the bureau of communicable diseases Baltimore City Health Department, are studying the epidemic (lethargic) encephalitis situation in Baltimore, at the request of the state commissioner of health The investigation will cover records in Baltimore for many years past, in order to obtain information on which to base an accurate statement as to the nature and cause of the present outbreak

Influenza and Pneumonia Records for Month—Seventy-nine deaths from influenza and 2641 cases of the disease were reported in Baltimore during the month of February, according to a bulletin issued by the Baltimore City Health Department There were 376 cases of bronchopneumonia with 158 deaths Of lobar pneumonia, there were 292 cases with 102 deaths During the month, seven cases of epidemic (lethargic) encephalitis were reported and six deaths, the heaviest monthly toll in the recent history of the health department The influenza situation is showing considerable improvement

Personal—Dr Thomas S Cullen, professor of clinical gynecology at the Johns Hopkins Medical School and visiting gynecologist at the hospital, is a patient in the hospital, where he recently underwent an operation for gallstones—Dr Thomas B Fletcher, associate professor of clinical medicine at the Johns Hopkins Hospital, is a patient at the Johns Hopkins Hospital, suffering from an attack of pneumonia Dr Daniel Jenifer has been appointed a health officer for Baltimore County, succeeding Dr John S Green, resigned—Dr John W Ebert has been appointed physician to the Baltimore County Jail, at Towson succeeding the late Dr Joshua Royston Green—Dr Arthur P Herring, commissioner of mental hygiene for Maryland spoke to the members of the Democratic Women's Club of Baltimore, March 1, on 'The Mental Hygiene Clinic'

MASSACHUSETTS

Illegal Practitioner Sentenced—According to press reports, Robert Thompson, Boston, was found guilty in the Suffolk superior criminal court, recently, and sentenced to three months in jail, for practicing medicine without a license

Entire Hospital Staff Resigns—Twenty one members of the staff of the Quincy City Hospital, including Chief of Staff N S Hunting resigned in a body February 18 Recent changes in the management were said to be responsible for the registrations Mayor Bates announced February 20 that he had obtained a staff of physicians to replace those who resigned

Boylston Medical Prize Awarded—The Boylston Medical Prize of Harvard Medical School Boston, has been awarded by a committee composed of Drs Reid Hunt William T Porter, John Warren and Henry A Christian to Prof Alfred N Richards Ph.D, and Dr Joseph T Wearn of the University of Pennsylvania, Philadelphia for an essay entitled "Observation on the Composition of the Glomerular Urine with Particular Reference to the Problem of Reabsorption in the Renal Tubules The prize awarded was \$500

Dinner to Dr Schick—Under the auspices of the state board of health, the city board of health and the department of preventive medicine and hygiene of Harvard University Medical School, a dinner was given in honor of Dr Bela Schick of Vienna at the Hotel Lenox, Boston February 8 Dr Francis X Mahoney, city health commissioner of Boston presided and Dr Rosenau was toastmaster Dr Schick was presented with a gold set of the equipment used by the city Schick staff It was announced that 30 000 children in the city of Boston have been Schick tested since May 1 1922

White Memorial Fund Health Unit—The trustees of the George Robert White fund have awarded the contract

the construction of the first health unit to be erected with the income from the fund The building will be erected on the site of the old police station at Commercial and Battery streets The total cost will be about \$185 000 The building will be three stories high, and will contain an auditorium an emergency hospital, dental clinics medical examination rooms and the quarters for the district nursing association Health Commissioner Mahoney expects to appoint the nurses, physicians and dentists for the clinic about December 1

MICHIGAN

The Beaumont Lectures—The Beaumont Lectures for 1923 were delivered before the Wayne County Medical Society at Detroit, January 29-30 Dr J R Macleod professor of physiology at the University of Toronto, Canada, delivered the first two lectures on 'The Physiology and Pathology of the Pancreas and the Demonstration of New Discoveries of Pancreatic Hormones The third lecture was delivered by Dr F G Banting of the University of Toronto, on "Clinical Work on Insulin"

MINNESOTA

Epidemic (Lethargic) Encephalitis in the State—Between thirty and thirty-six cases of epidemic (lethargic) encephalitis have been reported in Minnesota, according to records of the state department of health Dr A J Chesley secretary stated that the cases are distributed in the following counties Anoka Hennepin Lake Ramsey, Stevens Ottertail St Louis, Olney, Polk, Swift, Faribault, Goodhue and Big Stone

Personal—Dr Albert J Chesley executive officer of the state board of health, has been awarded the Cross of Valor of Poland for his services in that country during the World War—Dr Henry F Helmholtz of the Mayo Clinic, Rochester, spoke on 'Diagnosis and Treatment of Pyelitis in Infancy and Childhood' before the Jackson County Medical Society at Kansas City, Mo, February 20—Dr Arthur T Laird Nopeming State Tuberculosis Sanatorium, St Louis County was recently elected president of the Minnesota Occupational Therapy Association in Minneapolis—Dr Hazel Bonness of the state board of health has been appointed chief of the division of child welfare of the Montana Board of Health

MISSOURI

Health Unit Organized—In accordance with the recent decision of the St Louis County Court to adopt a health unit system to replace the office of health commissioner for the county Dr William F O'Malley, Webster Groves, was appointed head of the unit, February 23, for a period of three years

Professor Hinrichs Dead—Reports have been received of the death of Gustavus Detlef Hinrichs a graduate of the University of Copenhagen and for many years professor of chemistry in St Louis University School of Medicine Professor Hinrichs founded in 1875 the first state weather service in the United States Nearly fifty volumes of scientific memoirs in German, Danish English and French came from his pen

St. Luke's Hospital Opened—St Luke's Hospital Kansas City, was formally opened to the public, February 25 by the Rev Sidney Partridge bishop of the Protestant Episcopal Diocese of Western Missouri This institution, which was built and equipped at a cost of nearly \$700 000, has accommodation for 125 patients but when fully completed will have a capacity of 400 One entire floor is designed and reserved especially for obstetric patients

NEW HAMPSHIRE

Antivaccination Bill—A bill has been introduced in the legislature of New Hampshire which provides that no parent opposed to vaccination be ever required that their child be vaccinated before

NEW MEXICO

State Medical Meeting—The forty-first annual meeting of the New Mexico Medical Society will be held here 19 21 under the presidency of Dr J H Clark just preceding the annual meeting of the American Medical Association

NEW YORK

A Birth Control Bill—The legislature a bill entitled 'relative to the control of birth'

articles for the prevention of conception" The text of the bill provides that

The giving by a physician to any person, married or having a license to be married of any information or advice in regard to the prevention of conception on application of such a person to a physician is not an offense neither is it an offense to supply on written prescription of a physician any article instrument drug receipt or medicine for the prevention of conception

Physicians' Signatures Forged for Liquor—According to an announcement made by Gus J. Somons, chief prohibition officer of the state, signatures of physicians have been forged to prescriptions for liquor in a systematic manner, and many unscrupulous physicians and druggists are supplying liquor. As one method of obtaining signatures men representing themselves as prohibition agents visit physicians to check up on signatures and get copies of the physicians' signatures on pads. These signatures are then forged on prescriptions, and the prescriptions are sold to druggists at prices varying from \$1 to \$1.50 each.

Investigation Into Causes of Ward's Island Fire—An investigation into the causes of the Ward's Island fire, in which twenty-five lives were lost, was conducted jointly by the state hospital commission and a committee from the board of managers of the hospital. It is understood that no agreement has been reached as to the exact cause of the fire. Governor Smith in a special message to the legislature, recommends submitting to the voters of the state a proposal for a bond issue of \$50,000,000 for the erection of new state hospital buildings as well as an appropriation of \$1,438,950 for urgent repairs and the removal of fire hazards at these institutions.

New York City

Fellowship in Pathology Founded at Mount Sinai Hospital—A dinner was tendered Dr. Emanuel Libman, February 23, by his associates and pupils as a tribute to his twenty-five years of active service as associate pathologist to Mount Sinai Hospital. Dr. Frederick S. Mandelbaum, pathologist of the hospital, was toastmaster. Following the dinner it was announced that a fund of \$25,000 had been completed to found the Emanuel Libman fellowship in pathology.

Personal—Dr. Simon Flexner delivered an address on "Poliomyelitis, Encephalitis and Allied Conditions" before the section on biology of the Academy of Sciences of the American Museum of Natural History, recently. A reception was given recently in New York in honor of Dr. Rosalie S. Morton and Senator Royal S. Copeland. Dr. Morton who was head of the American Women's Hospital during the World War was recently decorated by the French government.

Cancer Society Meets—The annual meeting of the American Society for the Control of Cancer was held March 3 in the Pennsylvania Terminal Building. The following officers were elected for the coming year: Dr. Rudolph Matas, New Orleans, vice chairman; Dr. Howard C. Taylor, vice president; Calvert Brewer, secretary; and Thomas M. Debevoise, treasurer. The board of directors has elected the following physicians as members of the executive committee: Howard C. Taylor, Clement Cleveland, Haven Emerson, John C. A. Gerster, Howard Lilienthal, George H. Semken, Francis Carter Wood, Joseph Colt Bloodgood, Thomas S. Cullen, Robert B. Greenough and Edward Reynolds.

Hospital News—The Polyclinic Hospital, which was turned over to the government in 1918 for the treatment of disabled veterans, was formally opened to the public February 27, with memorial services for its founder, Dr. John A. Wyeth. The hospital has been renovated throughout. A section of ground at Fifty-Fourth Street and Twelfth Avenue, originally bought by the New York Hospital for a site for a new building, has been sold for commercial purposes. According to the present plan the hospital is to remain in its present location and an emergency hospital is to be built up town. The building at No. 31 Washington Square now occupied by the Washington Square Hospital has been sold and will be remodeled into apartments when the hospital lease expires. The trustees of Beth David Hospital held their annual banquet at the Hotel Commodore February 4. More than 400 persons attended. Among the speakers were Bird S. Coler, commissioner of public welfare, and Dr. Royal S. Copeland.

Low Infant Death Rates—According to Dr. Otto R. Eichel, director of the division of vital statistics of the New York State Health Department, Canandaigua, New Rochelle, Ossining, White Plains and Glen Falls have the best records among up state cities in respect to infant mortality in 1922.

In Canandaigua, the death rate of babies per thousand born alive was 38, in New Rochelle, 48, in Ossining, 52, in White Plains, 53, and in Glen Falls, 54. Five years ago, the infant mortality rate in New Rochelle was 96. In many other cities in this state, the results of child welfare work is equally striking. The Union Hospital in the Bronx has just compiled statistics showing that the death rate for infants in that borough is the lowest in the city for the first two months of 1923. In February, it was 69.8 for every thousand babies under 1 year, while in Queens it was 100.6, and in Manhattan, 92.3. The infant death rate for the entire city for the first six weeks of this year was 75, in comparison with 89 during the same period last year.

NORTH CAROLINA

Epidemic of Measles—Dr. Amzi J. Ellington, health officer of Goldsboro, reports 462 cases of measles in the city, 135 occurring in one week and thirty in one day. No fatalities have been reported. Goldsboro has a population of 11,296.

Personal—Dr. Charles Daligny has been elected county health officer of Montgomery County. Dr. Bomar A. Olds, Henderson, health officer of Vance County, has resigned to accept a position with the Rocky Mount Sanatorium. Dr. Fletcher H. Harris, Henderson, will succeed Dr. Olds.

OKLAHOMA

Hospital News—The Durant Memorial Hospital at Durant will be purchased by several local physicians and operated under the direction of the Bryan County Medical Society, it was recently announced.

OREGON

Tuberculosis Association Meets—At the annual meeting of the Oregon Tuberculosis Association held in Portland, February 23, A. L. Mills was reelected president. Dr. Caroline Hedger, Chicago, was the principal speaker at the meeting. It was announced that receipts from the Christmas seal sale amounted to nearly \$40,000.

PENNSYLVANIA

Philadelphia

Personal—Dr. Florence E. Kraker, who was given a year's leave of absence from the Pennsylvania Women's Medical College, where she is lecturer on obstetrics, has arrived in Shanghai to establish a department of obstetrics for Chinese women medical students. Dr. W. M. L. Cohn, Philadelphia, has published a history of Base Hospital No. 38, the Jefferson Medical College Unit. Harry Dee Brown has been appointed director of the Philadelphia Health Council and Tuberculosis Committee, to succeed Dr. Blair Spencer, who resigned several months ago. Mr. Brown, who leaves a position with the New York State Committee on Tuberculosis and Public Health, has been engaged in the war against tuberculosis for nearly fifteen years.

SOUTH CAROLINA

State Medical Meeting—The South Carolina Medical Association will hold its seventy-fifth anniversary home-coming meeting in the city of Charleston April 17-19, under the presidency of Dr. C. F. Williams of Columbia. It is desired to get in touch with every South Carolina physician living outside the state and every graduate of the Medical College of South Carolina. Communications should be addressed to the secretary, Dr. E. A. Hines, Seneca.

TEXAS

State Health Commissioner Appointed—Dr. William H. Beazley, Lufkin, was appointed state health officer by Governor Neff February 21, in succession to Dr. J. H. Florence. Dr. Beazley has been acting health officer since Dr. Florence's resignation January 1.

Cousins Medical Bill Passed by State—The senate, February 16, passed finally the Cousins medical practice bill by a vote of 23 to 1. The power to revoke licenses of physicians, vested in the original bill in the state board of medical examiners, was placed by amendment in the district courts. Penalty for violation of the provisions of the bill was reduced by amendment from two to four years in the penitentiary to not more than six months in the county jail or one to four years in the penitentiary. An effort early in the day to exempt chiropractors from the provisions of the bill failed when the motion to that effect was tabled, 16 to 4.

VIRGINIA

Hospital News—The contract has been let for the construction of the Virginia Baptist Hospital, Lynchburg, at a cost of approximately \$200,000.

WISCONSIN

Physician Put on Probation—It is reported that Dr. William G. Wheeler, Racine, who was found guilty on a charge of manslaughter, growing out of an illegal operation was recently put on four years' probation, under the state board of control.

Personal—Dr. Wade H. Fortner, Princeton, who has served as city physician for several terms, has been reappointed for another period of two years.—Dr. L. A. Steffen, Antigo, has been appointed a member of the state board of health to succeed his father, the late Dr. I. D. Steffen.

New Secretary for State Society—Following the lead of the state medical societies of Ohio and Virginia, the State Medical Society of Wisconsin has employed a fulltime lay executive secretary. The council at its annual meeting January 29, elected Mr. J. G. Crownhart, Madison, to fill the position, with headquarters in Milwaukee. In addition to his duties as secretary, he will, under direction of the council be the business manager of the association and managing editor of the *Wisconsin Medical Journal*. Dr. L. Rock Sleys, Wauwatosa, who is giving up the work after ten years of service, will remain as editor of the state journal and as delegate to the American Medical Association.

WYOMING

Eugenics Law Passed—The state legislature of Wyoming has passed a law under the terms of which a prospective bridegroom must present a physician's certificate showing that he is free from venereal disease in communicable form before a marriage certificate will be issued to him.

HAWAII

Effect of Vaccinia on Leprosy—The U. S. Public Health Service for January 5 describes the results of vaccination of a number of lepers in the Kala Hospital at Honolulu. Twenty-seven patients were vaccinated. Of these, sixteen had the nodular type, four the anesthetic type and seven the mixed. Vaccination was successful in nineteen cases. In the persons unsuccessfully vaccinated no evidence of any change of the leprosy lesions was noted. Of the nineteen successfully vaccinated patients, eleven developed acute leprosy eruptions in the two weeks following the date of vaccination, in eight cases there was no apparent change in the leprosy lesions.

PORTO RICO

Personal—Dr. Manuel Pavia has returned to Porto Rico from the United States, where he visited the principal medical centers. He is a member of the legislature of Porto Rico and returned to be present at its opening.—The *Bulletin* of the Porto Rico Medical Association states that Dr. Esteban Garcia Cabrera has left for the United States and will visit the institutions studying genito-urinary problems.

GENERAL

Meeting of Medical Women—The annual session of the Medical Women's Association will be held in San Francisco June 25-26, under the presidency of Dr. Grace N. Kimball, Poughkeepsie, N. Y., at the same time as the annual meeting of the American Medical Association. Dr. Kate Campbell, Hurd Mead, Middletown, Conn., is president-elect. Headquarters will be at the Hotel Plaza.

Association of American Medical Colleges—At the thirty-third annual meeting of the association at Ann Arbor, March 2-3, the following officers were elected: president, Dr. Irving S. Cutter, Omaha; vice president, Dr. Ray Lyman Wilbur, San Francisco; secretary, Dr. Frederick C. Zappfe, Chicago; executive council, Dr. Nathaniel C. Allison, St. Louis; and Dr. Walter L. Niles, New York. The next annual meeting will be held at Omaha.

Birth Rate Decreasing—According to statistics compiled by the provisional census bureau of the department of commerce, the birth rate declined and the death rate increased during the last nine months of 1922. The mortality rate ranged from 7.8 in Idaho to 14.3 in Maine, and averaged 11.7 in the states from which statistics were taken for each thousand of population in the period, as compared with an average of 11.6 during the first nine months of 1921. The birth rate

ranged from 18.3 in Washington, to 30 in North Carolina and averaged 22.8 in the first nine months of 1922, as compared with an average of 25 in the same period in 1921.

Filled Milk Bill Passes—The Filled Milk bill that previously had passed the House of Representatives was adopted by the Senate in the closing days of Congress and thereby was enacted into a law. It declares filled milk an adulterated article of food, injurious to public health, and states that its sale constitutes a fraud on the public. In defining filled milk, it is referred to as any milk cream or skimmed milk, whether or not condensed, evaporated, concentrated, powdered, dried or desiccated, to which has been added or with which is blended any fat or oil other than milk fat. The measure was opposed vigorously throughout the country by manufacturers of filled milk.

Joint Resolution on Narcotics Passes—House Joint Resolution No. 430, calling on the President to urge the governments of Great Britain, Persia and Turkey to limit the production of opium and the growth of the poppy, and on the governments of Peru, Bolivia and the Netherlands to curtail the production of coca leaves, passed both houses of Congress before adjournment March 4. The resolution prescribed that the minimum production of these narcotics be fixed at the amount necessary for strictly medicinal and scientific purposes. In both houses of Congress the measure went through without a record vote, the sentiment being strongly in favor of its adoption so that no time would be lost in appealing to these foreign governments to stop the increase in the consumption of these habit-forming drugs both by the American people and by people of other countries. The President is requested in the resolution to report back to Congress on the first Monday in December, 1923, the result of his action.

Cornerstone of Gorgas Memorial Institute Laid—The cornerstone of the Gorgas Memorial Institute for research in tropical diseases and the study of preventive medicine was laid February 18 in the exposition grounds in the city of Panama. Dr. Belisario Porras, president of the Republic of Panama and originator of the Gorgas Memorial Institute idea, was the principal speaker. Dr. Porras contrasted the Panama of his student days with that of today. He said it was the most natural thing in the old days to pass friends in the streets who were hurrying home in the grip of malarial chills, or with some other pernicious fever but that, thanks to Gorgas, the tropics have been redeemed, and Panama has been made one of the healthiest cities. Drs. Franklin H. Martin, acting president of the institute, and Augusto S. Boyd responded to Dr. Porras' address. Following the ceremonies, a reception was given at the presidential palace which Rear Admiral W. C. Braisted retired, is president of the School of Tropical Medicine, has been chosen scientific director.

LATIN AMERICA

Mexican Society Elects Officers—The Monterey branch of the Mexican Medical Association has elected officers as follows: president, Dr. Jose Baragan; secretary, Dr. Jesus Lozano; treasurer, Dr. Cristobal Guajardo.

New Medical Practice Act in Colombia—A recent law adopted in Colombia restricts the practice of medicine to graduates from Colombian schools or from countries having reciprocity agreements with Colombia and Colombians having regular foreign schools. In communities having no regular physician, permission to practice medicine but not surgery will be granted any individual with a good reputation who is endorsed by at least twenty-five prominent persons. Foreign physicians will be allowed to practice only after passing a written and practical examination in Spanish before a board the subjects being prescribed by the Bogotá medical faculty. The fees for foreigners will include all the fees charged students during their entire course, plus 200 pesos.

FOREIGN

Royal College of Physicians of London—The recent issued list of fellows, members and licentiates of the college contains the names of 370 fellows, 600 members and 1,000 licentiates.

New British Medical Journal—A criticism of the diet and disorders of infancy and childhood will be issued quarterly.

Another Centennial—The Vienna ophthalmologist, Prof Karl Stellwag von Carion, known best by his sign in exophthalmic goiter, was born early in 1823. His "Manual of Ophthalmology," 1862, has been translated into several languages.

Afghanistan Invites German Physicians—The *Munchener medizinische Wochenschrift* states that the government of Afghanistan is offering inducements for German physicians to settle in Afghanistan. Ten are wanted at once in the army, hospital and contract practice or private practice. The Leipzig League is in charge of the matter.

Artificial Limbs for Ex-Service Men in Roumania—The minister of war of Roumania and the board of public hygiene have issued a proclamation to the war cripples of Roumania irrespective of nationality stating that those possessing worn-out or useless artificial limbs should appear at the nearest military hospital, where measurements will be taken and suitable limbs supplied. Free railway transport and free board in hospital will be provided where necessary.

Foreign Congresses—The sixth annual meeting of the Australasian Association for the Advancement of Science was held at the Victoria University College, Wellington, New Zealand, January 9-10. The annual congress of the Royal Institute of Public Health will be held in Scarborough, England, May 16-21, under the presidency of Lord Riddell. The next annual congress of the Ophthalmological Society of the United Kingdom will be held in London, April 26-28, under the presidency of Dr A. Matland Ramsay.

Rockefeller Foundation Aids German Scientific Research—The *Klinsche Wochenschrift* states that Dr H. Poll is the secretary of the committee in charge of the \$50,000 which the Rockefeller Foundation has agreed to give annually for a number of years to aid scientific research. The money is to be used to provide means for scientific research which otherwise could not be carried out. The members of the committee are Professors Matthes, von Frey, Verse and Willstatter, and a representative of the Rockefeller Foundation.

Expeditionary Research Association—At a meeting, January 3, in London, held under the presidency of Sir Kenneth D. MacKenzie, it was decided to form a scientific expeditionary research association for the purpose of facilitating and promoting scientific research by means of expeditions to all parts of the world. There will be an advisory council composed of members of the councils of all the scientific bodies interested in or affiliated with the association. It was announced that a research expedition to the South Pacific Ocean would be organized in the summer, covering a period of about ten months, at a cost of approximately £45,000 (\$203,000).

Medical News from China—A special commissioner, sent by the League of Nations, will go to the Far East to make an investigation of infectious and contagious diseases. Dr Wu Lien-teh has been selected by the ministry of the interior of China to accompany the commissioner. During the recent hostilities in China, the hospitals were handicapped by lack of roentgen-ray equipment. The Peking Union Medical College and the Shantung Christian University School of Medicine, Tsinanfu, sent operating and roentgen-ray units to aid local hospitals. General Wu, in gratitude, purchased a complete roentgen-ray outfit and presented it to the Mission Hospital at Paotingfu, and General Feng followed this example at K'ai-fengfu. The Chinese churches recently organized a public movement to abolish licensed prostitution.

Venereal Disease in New Zealand—The report of the committee of the New Zealand Board of Health, appointed to investigate venereal diseases in the dominion, has recently been issued. The most important finding was the very general ignorance among the public on the subject of venereal disease. It was estimated that one person in every 428 of the population of the dominion is being treated by registered medical practitioners for venereal diseases or its after-effects. Dr I. F. S. Hay, inspector general of the mental hospitals of New Zealand, computes the number of persons now in the country who have or have had syphilis to be 33,000 or one in every thirty-eight of the population. Among the recommendations proposed were (1) that persons intending to marry should make an affidavit as to their freedom from communicable disease, (2) that a provision of the Queensland Act be adopted making venereal disease a ground for annulling a marriage contract and (3) that a law be passed compelling persons suffering from venereal disease to take treatment or be segregated.

International Health Course—The Health Organization of the League of Nations, with the assistance of the Rockefeller

Foundation, has commenced the practice of interchange of public health personnel (THE JOURNAL, February 17, p. 488). The first interchange of public health personnel was held in Belgium. Plans for the second interchange, which is to be held in England, were outlined in the *Lancet*, February 10. At the request of the ministry of health, arrangements are being made by the Society of Medical Officers of Health, which has appointed a special committee for this purpose. The party will consist of twenty-five persons, drawn from fourteen countries: Austria, Belgium, Czechoslovakia, Denmark, Finland, France, Hungary, Italy, Norway, Poland, Roumania, Russia, Serbia and Sweden. The officers will make their headquarters at the offices of the society, 1 Upper Montague Street, London. The first week will be spent in London. At the end of the week, the party will divide into groups of four or five persons, for study of health administration. The areas chosen, with the officers responsible for conducting the course follow: Birmingham and Warwickshire, Prof. John Robertson, Bradford and York, Dr J. J. Buchan, Glasgow and Lanarkshire, Dr A. K. Chalmers, Liverpool and Lancashire, Prof. E. W. Hope, Manchester and Cheshire, Dr Veitch Clark, and Newcastle and Durham County, Prof. Harold Kerr. The groups will remain in the areas to which they are assigned till March 28. They will reassemble in London, April 3, and, until April 6, will study port sanitary administration. April 11, the international representatives, with five British medical officers, will depart for Austria, where a similar course will follow before the officers return to their respective countries.

Personal—Mr N. Gist Gee, for twenty years professor of biology at Soochow University, China, has been appointed adviser on premedical education to the China Medical Board of the Rockefeller Foundation of New York. He will make a study of the teaching of chemistry, physics and biology at colleges in China. The *Medizinische Klinik* states that Professor Meyerhof, the physiologist of Kiel, has been invited by the secretary of the Rockefeller Foundation to deliver a series of lectures at New York, Boston and Baltimore, and has accepted. He spoke in Cambridge last year on his research on cell respiration and muscular energetics. The friends of Prof. M. Letulle of Paris, one of the editors of the *Presse medicale*, are collecting a fund to present him with an engraved plate on the occasion of his promotion in the Legion d'honneur. Each person subscribing at least 60 francs will be presented with a replica of the plate. M. P. Masson, 120 boulevard Saint-Germain, Paris, is the treasurer of the fund. The list of Letulle's works on internal medicine is a long one. Prof. J. Hirschberg delivered an address recently, at a special meeting of the Berlin Medical Society, on "The Greek Canon of Ophthalmology." It demonstrated anew his wonderful familiarity with the classics and with the oldest work on ophthalmology, and its influence on Arabic literature and on the centuries that followed. Hirschberg is now 79. The seventy-fifth birthday of Prof. James Israel of Berlin was celebrated by his friends recently with considerable ceremony. The congratulations of the German Surgical Society were presented by Bier, of the Berlin Surgical Society, by Korte, of the Berlin Medical Society, by Kraus, of the German Urologic Society and the Berlin Urologic Society, by Posner, and von Lichtenberg presented Israel with a special number of the *Zeitschrift für chirurgische Urologie* published in his honor. The *Klinsche Wochenschrift* states that the former surgeon-general of the Russian guards, Dr von Untersberger, aged 75, is living retired at Dorpat, having lost everything by the revolution. He was awarded a gold medal at the Tuberculosis Congress at Washington.

Deaths in Other Countries

Dr Alfred E. Harris, for nineteen years medical officer of health for Islington, London.—Dr Alfredo Ferrán Funalet de Ponce, Porto Rico.—Dr Muñoz Urrea de Talavera, known for his research on the histology of the eye.—Mme. Francq-Celse, who practiced at Boulogne-sur-Mer.—Dr Antonio Molina de St. Remy, an otolaryngologist, who settled in Porto Rico in 1898, but lately moved to Santo Domingo.

CORRECTION

Dr Scott Did Not Resign from Veterans' Bureau.—In THE JOURNAL, February 24, under Government Services, it was stated that Dr T. Hugh Scott, formerly executive officer of the U. S. Veterans' Bureau, had resigned. This was incorrect. Dr Scott has not resigned, but was recently transferred to the U. S. Veterans' Bureau Hospital at Muskogee, Okla., as officer in charge.

Government Services

Colonel Forbes in Message on Veterans' Bureau

On his retirement as director of the U S Veterans' Bureau, Col C R Forbes declared that the greatest need of the bureau was the establishment of a board of consultants consisting of four or five specialists to be paid not less than \$20,000 a year to care for the 25,851 hospital patients under treatment in government institutions. Colonel Forbes recommended that this board of consultants consist of one neuropsychiatric, one tuberculosis, one general medical and surgical, one eye, ear, nose and throat, and one orthopedic expert. An educational director was also suggested to supplement these members of the proposed board. Physicians considered by Colonel Forbes of the type necessary to serve the Veterans' Bureau and help solve the difficult problems were neuropsychiatric Dr W F Lorenz of the Wisconsin Psychiatric Institute, Dr D W Salmon formerly director of the National Society of Mental Hygiene, Dr W A White, head of St Elizabeth's Hospital, tuberculosis Dr E R Baldwin president of the Trudeau Sanatorium of New York, Dr S M Rinehart of the Veterans' Bureau, Dr Frank Billings of Chicago, general medical and surgical Dr Charles Mayo of Rochester, Minn., Admiral E R Stitt Surgeon-General of the Navy, Dr L B Rogers, assistant director of the Veterans' Bureau, in charge of the medical division.

Colonel Forbes asserted that mental cases were increasing among disabled soldiers, the figure at present standing at 9,243. The bureau is caring for 10,915 tuberculosis patients and 5,693 general medical patients, according to the latest figures.

Commanders of Navy Hospitals Change

Several changes have been made in the command of U S Navy hospitals. Capt N J Blackwood has been transferred from the command of the hospital at Boston to New York. Capt James F Leys, from the command of the hospital at Newport to Boston, and Capt H T Lowndes from the command of the hospital at New York to the hospital at Washington, D C.

Senate Committee to Investigate Veterans' Bureau

The Senate passed the Reed resolution authorizing a committee of three senators 'to investigate leases and contracts executed by the U S Veterans' Bureau or the Treasury Department for vocational schools and hospitals and for the purchase, rentals and sales of real estate and supplies used directly or indirectly for the benefit of the veterans of the World War'. The preamble of the resolution states that it is claimed that an unnecessarily large proportion of the appropriations made by Congress for the relief of veterans is being improperly consumed in overhead expense and duplication of duties, and in the employment of an unnecessarily large number of agents, physicians, instructors and other persons. The investigating committee will consist of Senators D A Reed (Pa.), chairman, D I Walsh (Mass.), and T L Oddie (Nev.). Senator Reed informed the President that the committee would organize at once. A statement was issued by the new director of the Veterans' Bureau Brig-Gen Frank T Hines as follows: 'The books and records of the U S Veterans' Bureau in Washington and in the field will be made available for Senator Reed's committee at all times. Full cooperation in every way will be given, and it is to be hoped that the inquiry will be beneficial not only to the veterans, but also to the bureau itself.'

International Cooperation on Health Matters

Assistant Surg-Gen J D Long has been detailed on request of the state department to accompany the delegates to the fifth International Conference of American States to be held at Santiago Chile March 25, 1923. Dr Long in addition to his duties in charge of the division of foreign quarantine of the public health service is assistant to the director of the international sanitary bureau of the Pan American Union. After the completion of the International

Conference of American States at Santiago, it is expected that Dr Long will visit various countries of South America to establish cordial relations with the health authorities of the countries visited. There are many international sanitary problems constantly present in the countries of South America due to such diseases as plague, smallpox, yellow fever and leprosy, and control of these diseases may best be had through the international cooperation and mutual understanding that will follow such visits. Assistant Surgeon-General Long has been selected for this detail because of his experience in the Philippine Islands and the Orient for ten years during which time he was director of health and chief quarantine officer of the Philippine Islands.

Vacancies in Navy Medical Corps

Arrangements are being made to fill the thirty-three vacancies in the Medical Corps of the Navy. The examinations will be conducted by subsidiary boards at the naval station nearest the candidate's home and the papers given a final mark by the central board of the department at Washington.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Feb 10, 1923

Victor Horsley Memorial Lecture

In 1920, a committee was formed to commemorate Sir Victor Horsley's services to science. It may be remembered that he died while on service with the army in Mesopotamia, in 1916. Subscriptions amounting to \$5,000 were received from all over the world. The committee, over which Sir Charles Ballance presides and of which Sir Frederick Mott is treasurer, resolved that the money should be invested in the name of a board of trustees, who should triennially appoint some one to deliver a lecture in London under the title of the Victor Horsley Memorial Lecture. No limitation is placed as to the country or profession from which the lecturer shall be appointed, or as to the subject of the lecture. Sir Edward Sharpey Schafer, professor of physiology in the University of Edinburgh, has accepted the invitation of the trustees to deliver the first lecture, which will probably be given in the autumn.

Zinc Poisoning

An outbreak of zinc poisoning is rare. One occurring recently among the inmates of an institution near London makes evident the danger that may arise from the use of galvanized iron vessels in cooking. About 400 persons were served at tea with hot stewed apples. Within a few minutes more than half of them complained of dizziness, nausea or sickness, and tightness in the throat. There were also some cases of diarrhea. The medical officer at once administered a bismuth and chalk mixture, and within a short time most of the sufferers recovered. Only ten were seriously ill and all were sufficiently well next day to carry on their ordinary work. The apples had been freshly gathered and tinned in large galvanized iron 'skeps' which were placed in iron steamers. The skeps were used because on a previous occasion the apples had turned black when placed directly in the steamer. Analysis of some of the apples showed that they contained 7 grains of zinc in the half-pinted tin can. This is equivalent to 20 grains of zinc sulphate to a pound. The dose given in the pharmacopoeia is from 1 to 3 grains. Each emetic dose, from 10 to 30 grains. A person who ate the stew may be expected to have taken about 20 grains (13 gm) of the apples can be explained.

acids on zinc. Hence, galvanized iron vessels are not sold for cooking, and in private houses never appear to be used for this purpose. But managers of public institutions seem to require instruction as to the risk.

Vital Statistics of 1921

The report of the registrar general for 1921, for England and Wales, which has just been published, shows that the standardized death rate was 11.5 per thousand, the lowest recorded. In all age groups up to 65, the rates are lower than ever before. The figures show the progressive saving of life in this country.

Decade	Death Rate
1841-1850	22.4 per thousand
1871-1880	21.4 per thousand
1901-1910	15.4 per thousand

Thus, the present death rate is only just over half that of the period 1841-1850. This table gives the principal causes of death.

DEATHS IN 1921

Cause	Number	Per Cent. of Total in Round Figures
Total	458,629	
Heart disease	53,710	12
Cancer	46,022	10
Tuberculosis	42,678	9
Pneumonia	34,708	8
Bronchitis	33,684	7
Influenza	8,995	

smallness of the influenza figure compared with previous years is noteworthy.

INFLUENZA DEATHS

Year	Number
1918	112,329
1919	44,801
1920	10,665
1921	8,995

In 1921, the tuberculosis, bronchitis, and pneumonia rates were also exceptionally low. On the other hand, the cancer rate showed a slight increase, and was higher than in any year since 1918. Infant mortality was 83 per thousand births, a rate second only to that of 1920. When this rate is compared with that of 153, in decade 1841-1850, the great improvement is evident.

A New Element Isolated in London

A new element, called hafnium, has been isolated in London by Dr. Alexander Scott. He showed specimens of the oxide, a cinnamon colored powder, at a meeting of the Chemical Society. A short time ago, two young chemists, Coster and Hevesy, working in the laboratory of Professor Bohr at Copenhagen, announced that, by roentgen-ray spectroscopy, they had found an unknown element occupying position 72 in the table of the elements, as arranged by Moseley. French chemists had already assigned this number to a supposed rare earth element which they called celtium, but the Danish chemists presented reasons for doubting their results. The element to which they gave the name of hafnium they believed to be a metal in the group of titanium and zirconium. They inferred its presence to 1 per cent in a Norwegian zirconium mineral, but had not isolated it.

In 1913, Dr. Scott received for analysis from New Zealand samples of black sand, from which he extracted a cream colored sand containing 75 per cent magnetic oxide of iron and 25 per cent titanium oxide. In further tests on the titanium oxide, he always found small quantities of a highly

refractory residue. He continued to collect these, labeling them "new oxide," but until a few weeks ago, he could not pursue his investigations. Knowing from the similarity of the compounds it made with potassium and fluorine to those of titanium and zirconium that it was a likely candidate for position 72 in the atomic table of the elements, he began to work as soon as he heard of the Danish discovery. He found the atomic weight to be approximately 180 and the chemical characters to be those which roentgen-ray spectroscopy would assign to hafnium. The black sand deposit of New Zealand is said to be more than 7 miles long and of unknown depth, so that if hafnium has a commercial value it can be turned out in bulk. From its analogies to zirconium and titanium, it may be of value in making incandescent mantles. Dr. Scott is a director of scientific research at the British Museum, and is well known for his investigations on the chemical deterioration of museum objects and the methods of restoring them. He is constantly consulted as to the preservation of the relics from the tomb of Tutankhamen. His discovery is the most striking chemical event in this country since Ramsay's isolation of helium.

Crippled Children of London

A careful survey made of London's crippled children has been embodied in a report by Mr. Elmslie, orthopedic surgeon to St. Bartholomew's Hospital, to Dr. Hamer, health officer for London. Acute poliomyelitis has now become the most important cause of crippling, tuberculosis having fallen to the second place.

CAUSES OF CRIPPLING

Infantile paralysis	961
Tuberculous disease	732
Congenital deformities	180
Other deformities	421
	2,294

Infantile paralysis is mainly a disease of the first two years of life, as the analysis of 559 cases shows.

INFANT MORTALITY

Age at onset	1	2	3	4	5	6	7	10
Number of cases	211	168	87	50	26	3	7	7

Mr. Elmslie finds that the treatment of acute poliomyelitis in London is very unsatisfactory and that a new method is called for. He emphasizes the importance of early diagnosis and treatment. His criticisms of existing methods are severe in contrast to the favorable opinion expressed as to the treatment of tuberculosis. Tuberculosis as a cause of crippling occurs later in life than poliomyelitis.

TUBERCULOSIS

Age at onset	1	2	3	4	5	6	7	10
Number of cases	31	73	100	68	88	48	42	55

The report does not treat of the causes of these diseases, which are regarded as a problem of preventive medicine.

Campaign Against Venereal Diseases

The seventh annual report of the National Council for Combating Venereal Diseases, which has just been published, brings the story of this movement up to June, 1922. One of the great difficulties in the control of venereal diseases is to secure continuous treatment. The figures of attendance at clinics are 1918, 46,000, 1919, 82,000, 1920, 85,000, 1921, 67,000. These figures have been interpreted as showing that at first the clinics were new and less numerous, and that at

last a definite drop took place in the incidence of the diseases. But many patients did not continue under treatment until cured. It has been estimated that 60 000 patients disappeared in the years 1919-1920 from the records of the clinics before they ceased to be a danger to others as well as to themselves. An obvious remedy would be compulsory treatment, and arguments for it, drawn from countries in which it has been tried, are given in the report. But compulsion is repugnant to the ideas of liberty that prevail in this country. Still there is hope that some limited form, for those who discontinue treatment, may be introduced by the ministry of health.

Centenary of Pasteur in London

In celebration of the centenary of the birth of Pasteur a lecture was given in the rooms of the Royal Society under the auspices of the Alliance française, by Dr Pasteur Valléry-Radot, a grandson of Pasteur and a distinguished pathologist and physician of the Paris hospitals. Sir Charles Sherrington, president of the Royal Society, who was in the chair said that Pasteur was not only a great Frenchman and a great man of science, but also a great benefactor to the human race and to animal kind, both intellectually and practically. The lecturer has under preparation the complete annotated works of his illustrious grandfather. In his address, Dr Pasteur Valléry-Radot said that nothing could be dearer to Pasteur than the knowledge that England the land of Jenner and Lister, and the home of some of his greatest friends and warmest partisans was paying homage to his memory. At the age of 25, Pasteur was already a great scientist. His study of crystals led him to discoveries in fermentation and the question of spontaneous generation. Pasteur was insistent on results and by showing the various industries the benefit of his studies, gave practical help in the production of wine, beer, milk, vinegar and bread. His well known discoveries of the causes of infectious diseases followed. His work, by its logical linking and its incalculable consequences, was one of the most wonderful products of man's genius, he had an extraordinary imagination, but he tempered it by the most strict experimentation. His ideal was to see humanity led to peace by the aid of science.

Australian Institute of Tropical Medicine

The Australian Institute of Tropical Medicine was opened at Townsville in 1913, in the part of the great continent that lies within the tropics. Although Australia is relatively free from tropical disease, it was felt that, when the north became more populated, malaria, yellow fever, amebiasis and other exotic diseases were likely to be imported, as the trade routes bring it into contact with countries in which these diseases are rife. The importance of training Australian physicians in tropical medicine was therefore realized. The project of making the institute a postgraduate school for tropical hygiene failed, as few graduates availed themselves of the facilities offered. But the other function of the institute—to conduct research into the tropical diseases—remained. Dr Anton Breinl, a pathologist well known for his work on tropical diseases in England, was appointed the first director, with three assistants. Some excellent work was done by them. The 'White Australia policy' which is as important in Australian politics as the Monroe doctrine is in America raised the question: Can the white man and woman live and maintain health in tropical Australia? Dr Breinl and his collaborators made some valuable researches whose results answered this question affirmatively. Dr Breinl resigned in 1921 and the institute became dormant. But with the creation of the commonwealth department of health, the institute was reconstructed. Its activities include the establishment of laboratories to render assistance to physicians in bacteriologic, protozoological and biologic work, and the

organization of a service to deal with tropical diseases in Australia and her dependencies. Work on hookworm disease has been done with the assistance of the Rockefeller Foundation. The whole of Australia and her dependencies have been surveyed, and the distribution of hookworm disease has been determined. It is proposed to establish permanent measures of control and thus to eradicate the disease. By arrangement with the Rockefeller Foundation a section of the work will be carried out with the collaboration of the Australian Institute of Tropical Medicine. Also an inquiry into the incidence of malaria and filariasis has been begun. The staff is being reappointed, and Dr R. W. Chiento a recent graduate of Adelaide University has been appointed director. He has been sent on a tour to Java, Ceylon, India, Italy, England, the United States and the Panama zone to study the methods of control of tropical diseases. Arrangements have been made with the Universities of Melbourne and Sidney for the instruction in tropical medicine required for a diploma.

PARIS

(From Our Regular Correspondent)

Feb 9, 1923

Measles as Modified by Preventive Injections of Convalescents' Serum

The method of prophylaxis of measles by the injection of the serum of convalescents from this disease, which has been recommended, since 1916, by C. Nicolle and E. Conseil, and which has been widely experimented with in America and in Germany, has been the subject of a series of studies in France (P. L. Marie, Nobecourt and Paraf, Chemisse). However, at a recent meeting of the Société médicale des hôpitaux de Paris, Drs R. Debre and Ravina held up against the method the transitory character of the immunity it confers. By a previous injection of convalescents' serum, they have proposed to secure an attenuated type of measles in children who become exposed rather than to suppress the disease entirely. To accomplish such a result, a preventive injection at the end of the period of incubation, between the seventh and the tenth day, should be given the patient. Under these conditions, a very peculiar type of measles is observed. The incubation period is sometimes prolonged and the period of invasion is practically suppressed, in some cases it expresses itself by a slight rise of temperature, without any catarrhal symptoms, Koplik's spots have not been observed. In such cases, the eruption is sometimes discrete sometimes more or less confluent, but not associated with catarrhal manifestations. The fever is mild or very light, the general condition remains entirely satisfactory throughout the course of the disease, which is very short. There are no complications. There is no tuberculin anergy. The serum of patients convalescent from this modified type of measles possesses the same preventive properties as the serum of those convalescent from ordinary measles. From these facts it would seem that children treated by this method have acquired in a simple manner and without danger, a satisfactory immunity to measles.

Intoxications Resulting from the Manufacture of Artificial Pearls

Dr Andre Leri reports observing in two women engaged in the manufacture of artificial pearls, a peculiar form of polyneuritis, characterized by a paralysis affecting chiefly the interosseal muscles of the feet and hands, and, to a lesser degree the extensor muscles of the feet and the flexor muscles of the hands, an anesthesia in the region of the interosseal branches of the extremities, abolition of all the tendon reflexes, paralysis of the soft palate, as well as with suppression of the pharyngeal and laryngeal reflexes, the oculi and the orbiculae.

nacreous varnish by hand, and also dipped the "pearls" in this varnish, which contained a high percentage of tetrachlorethane, a very volatile and toxic chlorin compound of carbon. These findings caused Leri to look into the matter more carefully, he found that all the women engaged in the dipping or the mounting process presented quite serious manifestations affecting the peripheral nervous system dilatation of the pupils or unequal size of the pupils with a weakened light reflex, paralysis of the extensors of the fingers, paralysis of the soft palate, with diminution or disappearance of the pharyngeal reflex, and frequently abolition of the tendon reflexes. Some of these women (those engaged in the mounting process, for example) merely breathed an atmosphere charged with the vapors of tetrachlorethane, without coming in direct contact with this substance. It was very evident, therefore, that intoxication occurred by way of the respiratory passages.

His attention having been once directed to the subject, Leri did not take long to become convinced of the great frequency, hitherto unsuspected, of intoxications through the industrial use of tetrachlorethane, which is used, not only in the manufacture of artificial pearls, but also as a solvent in a number of industries. Strict hygienic measures should therefore be employed in factories in which tetrachlorethane is used, and particularly in the artificial pearl industry. Braying of the nacreous varnish should not be done by hand, but a mechanical process should be substituted. The dipping ts containing the nacreous varnish should be kept closed much as possible, and the toxic vapors as they rise should sucked away from below. Only the employees absolutely eded should be allowed to remain, for any length of time, in e contaminated atmosphere. The employees should receive medical examination, from time to time, and those showing the first signs of intoxication should be eliminated without delay, the abolition of reflexes may be regarded as an alarm signal. In this manner, grave intoxications, for instance, certain types of commonly fatal icterus such as have been observed, can doubtless be prevented.

Seventy-Fifth Anniversary of Society of Biology

May 26, 1923, the Societe de biologie of Paris will celebrate the seventy-fifth anniversary of its foundation. The affiliated societies will also take part in the ceremonies. These are located at Bordeaux, Marseilles, Nancy, Petrograd, Lille, Barcelona, Strasbourg, Lyons, Buenos Aires, Lisbon, Athens, Bukarest, Cluj and Jassy, including the societies of Denmark, Sweden Lithuania and Belgium. The Societe de biologie and its affiliated societies will meet in plenary assembly on which occasion three questions will be discussed. Generation and Fecundation, Dr A Brachet, Physiologic Action of Potassium and Calcium, Dr H Zwaardemaker, and the Problem of Immunity in Invertebrates, Dr J Cantacuzene.

Death of Dr G Bardet

Dr G Bardet, secretary of the Institute of Hydrology in Paris and formerly president of the Societe de therapeutique has died at the age of 71. He was for many years chief editor of the *Bulletin general de therapeutique*.

Medical Expeditions

Those who took part in the fifteenth and sixteenth medical expeditions were invited recently to a reunion held in the Laboratoire de therapeutique of the Faculte de medicine. Each guest was presented with a beautiful plaque in memory of the occasion. Many lantern slides of climatic stations and mineral springs visited on these two expeditions were shown at the meeting.

Since the war, these expeditions, which were formerly directed by the late Dean Landouzy, have been under the scientific direction of Prof P Carnot who succeeded Lan-

douzy to the chair of therapeutics, and of Assistant Prof F Rathery. Dr Gerst has charge of the material equipment for the expeditions. The next expedition will include the climatic stations and the mineral spring resorts of the Jura, Savoy and Dauphine. Confreres from other countries, who may wish to join the expedition, will be heartily welcome.

VIENNA

(From Our Regular Correspondent)

Jan 26, 1923

Cocainism in Vienna

The number of victims of the cocain habit in this city has suddenly increased. The police are attempting to stop the illicit trade in this drug, which is new in our country, having been introduced by visitors. Our laws prohibit the dispensing of cocain by any chemist or apothecary unless on a regular prescription from a duly qualified and registered medical practitioner, and then only in solution, except when sold to hospitals or medical men. Thus it is clear that the quantities required for addicts can be obtained only by smuggling. Although no great harm has yet been done, the public is aroused to the possible danger.

Honorary Titles Relinquished

All medical members of the University of Vienna have given up the honorary titles conferred on them by the former or the present governments, such as councilor of the court and councilor of the emperor, retaining only those titles that have been obtained from the university by scientific work and teaching, such as professor or privat-dozent (or lecturer). These honorary titles were misleading, as they were looked on as evidence of special knowledge, while in fact they were only "ornaments" conferred for prolonged public service, or as a substitute for higher salaries. There was for many years a craze among German-speaking people for titles. The general medical practitioners had often demanded that physicians forego such titles, but the mentality of middle Europe was not yet ready for such a change in public life.

Congress on "Logopedy" Proposed

The Vienna phonetic society, which has done a great deal to promote the study of the physiology and pathology of the human voice, is endeavoring to arrange a "logopedic" convention in this city. Invitations to meet this summer have been sent to the leading men in Europe engaged in this kind of research, and if the acceptances are numerous enough, the convention will take place. It is intended to hold a symposium on aphasia, phonetic problems in adolescents and peripheral disturbances of the speech. Otolaryngologists and rhinologists will also be invited.

Charts on Mortality and Births in Vienna

In a paper on vital statistics which Dr Hecke of the Board of Public Health presented before the Sociologic Society of this city, charts were exhibited which show that since 1919 a small but significant increase of births has taken place. This however, cannot yet compensate for the increased loss of life and the decrease in births during the war years. About the same ratio between births and deaths existed in 1921 as in 1915, the exact figures for 1922 are not yet available but the very low figures of 1918 are already greatly exceeded. While in 1911 the total mortality amounted to 33,664 the birth rate stood at 41,030. In the next year both figures dropped in nearly parallel lines the deaths numbering 32,161 the births 39,801. In 1913 the deaths increased a little, numbering 32,319 and the births diminished to 37,367. Similar conditions prevailed in 1914 when the deaths rose to 33,268, and the births dropped to 36,378. The mortality figures went up by leaps and bounds in 1918 and 1919, so that the curve

on the chart resembles a human arm outstretched in despair, while the birth curve falls in a steep decline

In 1917, only 20,688 children were born, while 46,131 persons died from influenza and other diseases. The climax was reached in 1918, when there were 19,257 births and 57,497 deaths. In 1919, the number of births rose to 29,218, the deaths dropped to 40,922. This satisfactory trend continued in the next year with 27,821 births and 34,197 deaths, in 1921, there was a slight excess of births over deaths 28,798 against 28,297, respectively

Scientific Research in Austria in 1922

In a short report to the government, which demonstrated the meagerness of the regular appropriations to the scientific research institutes, Professors Becke and Rademacher asked for larger appropriations, and enumerated the most important investigations conducted last year in this country. Apart from the publications dealing with the geographic and ethnographic researches in the Balkans in 1915-1918, when our armies occupied these countries, the results of which were made known in 1922, one of the most important papers was that by Dr. Schedler, who made geomagnetic surveys in thirty different places and found marked differences and changes from the values heretofore accepted.

The Vienna Radium Institute, a private concern, has done excellent work in the investigation of radioactive substances. It has been shown that the age of certain mineral deposits can be estimated according to the proportion of transformation or decay of the radioactive substances contained in them. While the uranium-pitchblende of Bohemia is about 200 million years old, in Norway there are minerals at least twice as old, and in Ceylon the layers of thorium have been found to be at least 500 million years old.

A tremendous amount of work is still going on in the biologic institute (Vienna). Here the problems of transplantation have attracted the attention of a number of gifted investigators. The pupils of Przibram study especially the physiology of transplanted eyes, hearts and legs. Koppányi has succeeded in transplanting eyes in rats, and these eyes seem to be functioning. At a recent meeting of the Vienna Ophthalmologic Society, his experiments were vehemently attacked by the oculists, but just as vehemently defended by the physiologists. Dr. Weiss transplanted entire limbs in amphibia, exchanging, for instance, arms and legs, and demonstrated that these transplanted limbs functioned normally after a few days. In a group of these animals he could even transplant whole hearts into the peritoneal cavity. These transplanted hearts obtained an organic union with the new host, the animal thus having two hearts.

In the chemical laboratories of the university, important researches on the catalytic effects of copper and of the methyl-groups of methylated benzene compounds are in progress. In the physical institute, studies on colors and their differentiation are conducted by Dr. Duschek-Frankfurt. A prehistoric cave, discovered in the Styrian Alps near Mautnitz, gave opportunity for the study of animals and plants of diluvial times, while the results of botanic researches in the Far East and in the African Sudan begun by Austrians before the war have been published recently.

All these important contributions to science have been made in spite of an appalling lack of funds indicating what might be done if the scientific spirit were not subdued.

Graduate Work for Vienna Practitioners

The progress of medicine has made it necessary for practitioners to keep in touch with the latest achievements but it is not an easy matter to attend the so-called postgraduate courses organized by the university. These courses last a

fortnight, are conducted through the day and are not therefore accessible to the average practitioner, who simply cannot spare a fortnight four times a year for this purpose. The Wiener medicinisches doktoren Kollegium (a private medical corporation) has instituted the Seminar Abende (instruction evenings), which are open to all medical men free of charge. Any physician in Vienna may inform the secretary of the kollegium that he desires instruction on a certain point or subject. These notices are collected. Eminent lecturers then take charge of the queries and summarize them under dermatology, pathology, gynecology or other subjects. Every Monday at 6:30 p. m., one or two of the lecturers speak on the subject, and, as far as possible, answer the questions submitted a week before. Meanwhile, the lecturer has time to look up the latest references.

Discussion is, as a rule, encouraged. The new departure has been given a warm reception by the profession, and is considered a great success. Practitioners from Germany, the provinces and foreign countries have asked permission to attend these evenings so as to be able to introduce new methods in their own cities or countries. The university has approved these "evenings," and one of the largest classrooms has been placed at the disposal of the kollegium for a weekly lecture. Eminent specialists are now eager to enlist as lecturers and referees, and the kollegium has only to select the man best suited for presenting the subject of the evening.

The Problem of Alcohol in Teaching

In a paper presented before the Austrian Society for Hygiene, Reichel discussed the difficulties of presenting the alcohol problem in schools: how to impress on adolescents the detrimental effects of alcohol. A large percentage of the population is of the opinion that moderate consumption of alcohol is not detrimental. It is noticeable that total abstainers not infrequently are vegetarians, or faddists of another kind, and thus cannot be regarded as commendable examples. Poets of all nations have always glorified wine as an excellent beverage, and in religious acts of several creeds wine plays an important part. Therefore, youth must be taught that self control is the principal means of insuring a sound mind in a sound body.

The lecturers do not believe it advisable, in the case of young persons, to demonstrate the harmful effects of alcohol by pathologic specimens. It is much more effective to prove to them that drinkers are more subject to disease and illness than abstainers. Statistics of insurance societies, mortality statistics of alcohol-consuming classes (waiters, barmen) and of moderate drinkers, and of drinking races (French, German, Russian) should be shown, to emphasize that the person who uses alcohol is more likely to be sick than persons who do not use it. This method appeals to the instinct of self-preservation.

Especially interest is evoked in the youthful minds by the experiments and observations on sportsmen. Durig has collected statistics of record holders among German athletes. The absolute superiority of total abstainers over even moderate drinkers is a revelation to young men, whose interest in sport is intense even in our countries. It is easy to convince them that mental health is inconsistent with bodily ill health. Reichel thinks that children should be taught to refuse even to taste alcohol. The supposed increase of mental activity under the influence of alcohol can easily be shown to be misleading. The figures on temporary mental derangements, even of lasting mental harm due to alcohol, can be easily traced. The statistics of hospitals for the insane offer excellent proof. It is important that the school physician himself set an example of total abstinence and that school boards appoint only teachers who are not

BERLIN

(From Our Regular Correspondent)

Feb 10, 1923

Effect of Economic Conditions on Hospitals

On account of the bad economic conditions, the private hospitals have begun to experience difficulties. In Berlin, at the present time, the cost of maintenance per patient in the public welfare hospitals amounts to more than 3,500 marks a day. The city contributes, however, only 1,980 marks and the health insurance societies only 1,500 marks per patient. Consequently, the total indebtedness of the municipal general hospitals has reached the sum of 4,200,000,000 marks, while the deficits of the forty private hospitals (denominational institutions, homes for the aged, etc.) amount to 100,000,000 marks. The municipal government will therefore be compelled to lend its aid, and it has been proposed that the price of gas be raised 5 per cent for the benefit of municipal welfare institutions.

The Prussian Academy of Sciences

At the last two sessions of the Academy of Sciences, Prussia's most distinguished scientific body, Professor Beckmann spoke on the subject of protection to human life through improvement in nutrition. For his proper nourishment, man needs, chiefly, digestible carbohydrates and albuminous substances. The latter he derives mainly through the mediation of domesticated animals. It lies in the interest of man's nutrition, therefore, to provide our domesticated stock with plant foods that are as easily digestible as possible. For example, through maceration of straw by treating it with alkali hydroxide, carbohydrates may be made more digestible, and, by the application of leaching with water, lupine seeds may be detoxicated, so that their albuminous substances may be utilized to advantage for the feeding of stock. An increase in the digestibility of stock foods, or any other improvement in them that can be effected, immediately redounds to the benefit of human nutrition. Any conservation of foodstuffs is also of advantage to human nutrition. There are many experiments in progress in these fields of endeavor.

Professor Correns, the director of the Kaiser Wilhelm Institute for Biologic Research, located in Dahlem, a suburb of Berlin, delivered a lecture on the "Numerical Relationship of the Sexes." Whereas Süssmilch in 1741 referred in one of his works to "God's interposition" in the distribution of the sexes of mankind, modern science is endeavoring to acquire an influence over the determination of sex. Süssmilch sought to explain teleologically the fact that for every 100 girl births there were from 104 to 105 boy births by citing statistics to the effect that boys, during childhood are subject to a greater mortality. However, the figures vary in different countries and are also subject to secular changes, wars, especially, affect the numerical relationship of the sexes. Internal or external conditions may change the relationship quite markedly, for instance, influences may be brought to bear on the sperm cells. Such influences may affect the numerical relationship in two ways: either one kind of sperm cell may be strengthened or weakened at the expense of the other, or the physiologic conditions under which they exist may be modified by the voluntary act of man. Up to the present time however science has not progressed very far in its experimental endeavors looking toward sex determination so that "God's interposition" still holds, as a matter of fact.

The Institute for Roentgenologic Research

The Institute for Roentgenologic Research which, since the death of Geheimrat Grunmach in 1919 has been lying fallow as it were, is at last to have a new director. The selection of a new director for this neglected post has been delayed owing to the fact that there has been a difference

of opinion between the government and the university faculty as to the course that the institute should follow. While the government was inclined to put the administration of the institute in the hands of a roentgenologist, the faculty voiced the opinion that a physicist should be put at the head of affairs, on the ground that clinical roentgenology and other phases of radiotherapy were sufficiently well provided for in the various clinics, not only from the diagnostic but also from the therapeutic side. There was a need for the development of roentgen-ray research, and for that reason a physicist would seem to be indicated rather than a medical man. The deliberations on the subject have now been brought to a close, and the institute, which was formerly a laboratory for roentgen-ray examinations, has been changed into an institute for roentgenologic research, and a physicist, Prof. W. Friedrich, head of the Radiologic Institute of the Women's Hospital in Freiburg, has been appointed as director. At the same time, the position has been raised to the rank of a head professorship. Friedrich, working sometimes alone and sometimes in collaboration with Professor Gauss of Freiburg and the late Professor Kronig, has performed meritorious service in the field of roentgenologic research and in its practical application.

Personal

Prof. Dr. James Israel, Berlin surgeon, celebrated, February 2, in an enviable state of physical and mental health, his seventy-fifth birthday.

Hermann Hartmann, the founder of the *Wirtschaftliche Organisation der Aerzte Deutschlands* (Leipziger Verband), died at Leipzig, January 20, at the age of 59. Hartmann was a natural-born leader and a strong, self-reliant personality. At a time when physicians were helplessly exposed to the caprice and exploitation of the directors of the health insurance societies, Hartmann saw the value of organizing, thus he became, at the turning-point of the century, the first man in Germany to effect a union of professional men for economic purposes. By persistent, energetic effort he forced the medical profession to recognize the medical organization he had founded, and at last brought it about that this organization gained a powerful influence with the government and in parliament, and came to be regarded as possessing equal rights with the directors of the health insurance societies in matters pertaining to health insurance. He was later chosen as the representative of the medical profession on the Reichswirtschaftsrat (economic council). Establishment of the principle of free choice of physician was the method Hartmann employed to restore the liberties of the physicians in their struggle with the health insurance societies. The Hartmann League, as the economic organization of the medical profession has been called in his honor, has, through his efforts, been placed on such a solid foundation that what he has wrought will persist in spite of the death of the founder.

Marriages

PERCY J. CARROLL major M. C. U. S. Army, Jefferson Barracks Mo. to Miss Helen Byrne of St. Louis, February 3.

JAMES M. MILLER captain M. C. U. S. Army, Fort Eustis Va. to Miss Bessie E. V. Keil of Walhalla, S. C., February 3.

JOHN MAURICE HAYES Decatur, Ill. to Miss Helen D. Hogan of Assumption recently.

CARLE E. BRANTLEY to Mrs. Katherine Oakman, both of Little Rock, Ark. February 10.

FRANKLIN W. SELLS Osceola, Iowa to Miss Clara L. Black of Los Angeles January 3.

LOVELL WOODFIN GROVE to Miss Dorothy Haverty, both of Atlanta Ga. January 19.

Deaths

Cyrus Lee Stevens ♂ Athens, Pa., College of Physicians and Surgeons, Keokuk, Iowa, 1880, consulting surgeon at the Robert Packer Hospital, Sayre, where he died, February 19, aged 71, following a long illness. Dr Stevens was born at Stevensville, Pa., in 1851. Following his graduation, he visited hospitals in New York, London and Paris and was appointed professor of obstetrics and surgery, Medical Department Central Turkey College, at Aintab, Turkey, where he remained for three years. Returning to the United States in 1884 he was appointed medical superintendent at the New York Post-Graduate School and Hospital. He served as member of the board of trustees, secretary and president of the Medical Society of the State of Pennsylvania, president and secretary of the Bradford County Medical Society, member of the board of health, the borough council, and editor of the *Pennsylvania Medical Journal*. Dr Stevens was a member of the House of Delegates of the American Medical Association for six years, a member of the reference committee on amendments to the constitution and by-laws for three years, and chairman of the reference committee on credentials for one year. He was a member of the American Association for the Advancement of Science, and in 1907 was made a member of the Pennsylvania House of Representatives.

Sir Thomas George Roddick, Montreal, Canada, honorary president of the Medical Council of Canada, died, February 20 of arteriosclerosis, aged 76. Dr Roddick graduated from McGill University Faculty of Medicine, Montreal, in 1868, and was appointed professor of surgery in 1890, dean of the medical faculty, 1901-1908, governor, 1908 and at the time of his death, emeritus professor of surgery. He had served as consulting surgeon at the Royal Victoria and the Montreal General hospitals and was a member of the Canadian parliament from 1896 to 1904. Dr Roddick was appointed first colonial president of the British Medical Association in 1896, and was knighted in 1914.

John Bernard McGee, Cleveland, Western Reserve University School of Medicine, 1878, at one time professor of therapeutics and secretary of the faculty, Cleveland College of Physicians and Surgeons, and associate professor of therapeutics at his alma mater, member of the Ohio State Medical Association, the American Association for the Advancement of Science, the American Anthropological Association, the Cleveland Medical Library Association, the Cleveland Clinical Club and formerly president of the Cleveland Academy of Medicine, on the staff of St Joseph's Orphan Asylum, aged 69, died, February 10, following a long illness.

Daniel Hughes Du Pree ♂ Athens, Ga., Johns Hopkins University Medical Department, Baltimore, 1907, formerly assistant professor of clinical medicine at the University of Georgia Medical Department, Augusta, member of the American College of Physicians, served in the M. C., U. S. Army, during the World War, with the rank of captain, aged 39, died, February 22, of angina pectoris.

Charles William Franzoni ♂ Washington, D. C., Medical Department of Columbian College, 1869, member of the Biological Association of Washington, formerly president of the Medical Society of the District of Columbia and for thirty-five years treasurer of the Washington Medical Society, Civil War veteran, aged 85, died, February 17, of bronchopneumonia.

Lem Walter Spriggs, San Francisco, College of Physicians and Surgeons of San Francisco, 1899, Jefferson Medical College of Philadelphia, 1904, formerly dean, and professor of abdominal surgery and gynecology at the College of Physicians and Surgeons of San Francisco, aged 51, died, February 16, of chronic myocarditis and angina pectoris.

Joseph Weinstein ♂ New York, University and Bellevue Hospital Medical College 1899, member of the American Academy of Ophthalmology and Oto-Laryngology and the Berlin Laryngological Society, on the staffs of the Sydenham, Beth David and Beth Israel hospitals, New York, aged 45, died recently, at Frankfort, Germany.

Stephan Alexander Hunter, Pittsburgh, Jefferson Medical College of Philadelphia, 1878, ordained Presbyterian minister, 1877, served as a missionary in China 1879-1891, author of "A Manual of Therapeutics and Pharmacy" and "An Analysis of the Book of Hebrews" (both in Chinese), aged 71, died, February 20 of senility.

Tunis C. Quick ♂ Buffalo, Medical Department of Columbian University, Washington, D. C., 1895, member of the Medical Society of Virginia, served in the M. C., U. S. Army, during the World War, surgeon in the U. S. Public Health Service at the time of his death, aged 52, died, February 21, of heart disease.

Herbert James Hall ♂ Marblehead, Mass., Medical School of Harvard University, Boston, 1895, former president of the American Occupational Therapy Association, since 1912 medical director of the Devereux Mansion Sanatorium, where he died, February 19, aged 52, following a long illness.

Henry Albert Hutcheson ♂ Oaklandon, Ind., Medical College of Indiana, Indianapolis 1903, formerly associate in clinical surgery at Indiana University School of Medicine, Indianapolis, aged 49, died, February 15 at St. Vincent's Hospital, Indianapolis, following an appendectomy.

William Shannon ♂ New York, New York University Medical College, 1889, formerly clinical instructor of pediatrics at Cornell University Medical College on the staffs of Willard Parker, Riverside, and Misericordia hospitals, aged 59, died, February 19, of pneumonia.

Enos John Hughes, Chicago, College of Physicians and Surgeons, Keokuk, Iowa, 1876, University of Michigan Medical School Ann Arbor, 1886, for more than thirty years medical examiner for the Baltimore and Ohio Railroad, aged 65, died, March 2, of heart disease.

James John Dickinson, Pittsburgh, Jefferson Medical College of Philadelphia, 1913, member of the Indiana State Medical Association, served in the M. C., U. S. Army, during the World War, with the rank of captain, aged 35, died, February 16, of pneumonia.

Ransom J. Chase, Springfield, Colo., Hahnemann Medical College and Hospital of Chicago, 1903, served in the M. C., U. S. Army, during the World War, served with the American Red Cross in Russia for four years, aged 44, died, February 3 of pneumonia.

Eugene Francis Daum, Chicago, Northwestern University Medical School, Chicago, 1900, member of the Illinois State Medical Society, served in the M. C., U. S. Army, during the World War, aged 46, died, March 1, of acute endocarditis following influenza.

George Washington Faller ♂ Oyster Bay, N. Y., New York University Medical College, New York, 1878, member of the New York Academy of Medicine, formerly on the staff of the Nassau Hospital, Mineola, aged 68, died, February 19, of heart disease.

George Woodruff Johnston, Washington, D. C., University of Pennsylvania School of Medicine, Philadelphia, 1882, formerly on the staff of the Emergency Hospital, aged 64, died, February 20, of heart disease while delivering an address.

Paul Tudor Jones, Columbus, Ga., University of Virginia Department of Medicine, Charlottesville, 1872, Bellevue Hospital Medical College, New York 1873, member of the Medical Association of Georgia, aged 71, died, February 9.

George Harcourt Willis, Winslow, Ill., Rush Medical College, Chicago, 1900, served as mayor of Winslow for two terms and for eleven years as secretary of the board of education, aged 50, died, February 17, of pneumonia.

Andrew A. McNeans ♂ Monterey, Mexico, Trinity Medical College, Toronto, Canada, 1889, member of the State Medical Association of Texas, served for several years as American vice consul in Monterey, aged 56, died, February 9.

Lemuel B. Spung, New Lexington, Ohio (licensed, Ohio 1897), member of the Ohio State Medical Association, aged 63, died February 11, at the Bethesda Hospital, Zanesville, of peritonitis, following an appendectomy.

Domer Gheen Smith ♂ Freeport, Ill., Jefferson Medical College of Philadelphia 1899, for several years secretary of the Tri-State Medical Society (Illinois, Iowa, Wisconsin), aged 56, died, February 28, of pneumonia.

Robert Beardsley Goodyear, North Haven, Conn., Yale University School of Medicine 1868, member of the Connecticut State Medical Society, Civil War veteran, aged 87, died, February 21, of senility.

James Fotheringham Kendrick, West Burke, Vt., University of Vermont College of Medicine Burlington, Vt., 1899, member of the Vermont State Medical Society, aged 52, died, January 15, of paralysis.

Lester Ours, Wheeling, W. Va., Jefferson Medical College of Philadelphia, 1922, aged 25, died at the Ohio Valley General Hospital where

William Morrison, Brooklyn, Long Island College Hospital, 1909, also a clergyman, formerly pastor of the First Baptist Church of Flushing, N. Y., aged 74, died, February 20, of cerebral hemorrhage

Cornelius Abram DeMund, Ridgewood, N. J., Cornell University Medical College, New York, 1900, member of the Medical Society of New Jersey, aged 44, died, February 3, of valvular heart disease

George Alexander Graham, Raeford, N. C., New York University Medical College, New York, 1876, member of the Medical Society of the State of North Carolina, aged 70, died, February 1

Altero Lipa B. Weindrug, New York, University and Bellevue Hospital Medical College, 1900, member of the Medical Society of the State of New York, aged 49, died, February 20, of pneumonia

Louis Lawrence Wilencheck, Fairfield, Idaho, University of Colorado School of Medicine, Denver, 1916, member of the Idaho State Medical Association, aged 31, died, January 27, of influenza

Albert A. Pratt, Enosburg Falls, Vt., University of Vermont College of Medicine, Burlington, 1904, member of the Vermont State Medical Society, aged 53, died, January 12, of myocarditis

Oscar W. Whitacre, West Frankfort, Ill., St. Louis College of Physicians and Surgeons, St. Louis, 1909, member of the Illinois State Medical Society, aged 40, died, February 11, of tuberculosis

Charles Marchant Ramsdell, Cove, Ore., Hospital College of Medicine, Medical Department Central University of Kentucky, Louisville, 1877, aged 68, died, February 8, following a long illness

Charles Bellamy Young, Middletown, Conn., Medical Department of Columbia College, New York, 1894, on the staff of the Middlesex Hospital, aged 54, died, February 1, of diabetes

Arthur M. Eastman, Minneapolis, Hahnemann Medical College of Philadelphia, 1879, president of the Minnesota State Board of Medical Examiners, aged 67, died, February 23

William Blaine Judy, Mount Vernon, N. Y., Northwestern University Medical School, Chicago, 1919, formerly on the staff of Mount Vernon Hospital, aged 30, died, February 19

George Francis Caldicott, Worcester, Mass., Tufts College Medical School, Boston, 1921, on the staff of Worcester City Hospital, where he died, February 11, of pneumonia, aged 26

Thomas Hartley Hall, Dublin, Ga., Pennsylvania Medical College, Philadelphia, 1859, member of the Medical Association of Georgia, aged 85, died, February 12, of senility

John Wesley Corman, North Tonawanda, N. Y., University of Toronto Faculty of Medicine, Toronto, Canada, 1874, aged 73, died suddenly, February 8, of heart disease

Minerva A. Kline, Chicago, Hahnemann Medical College and Hospital of Chicago, 1892, aged 60, died, March 2, at the Hahnemann Hospital, of myocarditis

William P. Burge, San Francisco, Western Homeopathic College, Cleveland, 1866, aged 89, died, February 1, at the Old People's Home, of arteriosclerosis

George Benjamin Phelps, New York, Medical Department of Columbia College, New York, 1883, aged 68, died suddenly, February 15, of heart disease

John Alfred Remington, Central Falls, R. I., Bellevue Hospital Medical College, New York, 1891, formerly state senator, aged 55, died, February 13

Lyman A. Clark, Utica, N. Y., New York Homeopathic Medical College, New York, 1869, aged 77, died, February 7, at the Masonic Home, of senility

William H. H. Tate, Heflin, Va., Louisville Medical College, Louisville, Ky., 1875, Confederate veteran, aged 81, died, February 2, of senility

Joseph B. Morrison, Maryville, Mo., Jefferson Medical College of Philadelphia, 1861, Civil War veteran, aged 86, died in February in New York

Stewart Newell Pool, Pittsburgh, University of Pennsylvania School of Medicine, Philadelphia, 1891, aged 55, died, February 19, of pneumonia

Norton Hills Pardo, Glendale, Calif., University of Michigan Medical School, Ann Arbor, 1894, aged 54, died, February 9, of heart disease

Thomas Leo Callen, East Newark, N. J., University of Tennessee College of Medicine, Memphis, 1902, aged 42, died, February 21, of influenza

Charles Walter Connell, Fall River, Mass., Medical School of Harvard University, Boston, 1887, aged 63, died, February 7, of heart disease

J. H. Morrow, Blue Ridge, Texas, St. Louis College of Physicians and Surgeons, St. Louis, 1890, aged 69, died, January 27, of influenza

James Massey Jones, Interlachen, Fla. (licensed, Florida, 1889), Confederate veteran, also a druggist, aged 79, died, February 12, of senility

John Mason Phillips, Evansville, Miss., Vanderbilt University Medical Department, Nashville, Tenn., 1882, aged 63, died, February 8

Ezra Grumbine, Lebanon, Pa., University of Pennsylvania School of Medicine, Philadelphia, 1868, aged 77, died, February 16, of senility

William E. Wisner, Columbus, Ind., Cincinnati College of Medicine and Surgery, Cincinnati, 1870, aged 90, died, February 8, of senility

W. H. Emmons, Phoenix, Ariz., Bennett College of Eclectic Medicine and Surgery, Chicago, 1874, aged 82, died, January 26, of senility

George W. Stevenson, Phoenix, Ariz., Curtis Physio-Medical Institute, Marion, Ind., 1894, aged 53, died, January 23, of tuberculosis

Robert N. Cartwright, Fairfield, N. C., Jefferson Medical College of Philadelphia, 1884, formerly state senator, aged 65, died recently

Elijah J. Shelton, Bloomfield, Iowa, College of Physicians and Surgeons, Keokuk, Iowa, 1864, aged 91, died, February 18, of senility

George W. Helmick, Columbus, Ohio, Starling Medical College, Columbus, 1877, aged 65, died, February 22, of heart disease

A. Neal Wood, Ashdown, Ark., University of Arkansas Medical Department, Little Rock, 1890, aged 57, died, December 15

John Irvine Hostetter, Colo., Iowa, Chicago Medical College, Chicago, 1880, aged 67, died, February 16, of cerebral hemorrhage

Edwin D. F. Phillips, Kansas City, Mo., Kansas City (Mo.) Medical College, 1876, aged 81, died, December 24, of chronic nephritis

Samuel E. Nixon, Burlington, Iowa, Hahnemann Medical College and Hospital of Chicago, 1874, aged 73, died, February 10

Samuel William Allen, Chicago, University of Arkansas Medical Department, Little Rock, 1882, aged 61, died, February 10

Milton C. McBride, Dallas, Texas, Memphis Hospital Medical College, Memphis, Tenn., 1883, aged 64, died, February 7

William O. St. Sure, Sheboygan, Wis., Rush Medical College, Chicago, 1893, also a druggist, aged 74, died, February 6

Callie A. Rennoe, South Bend, Ind., Rush Medical College, Chicago, 1892, aged 54, died, February 11, of heart disease

Theodora Tiffie Purkitt, Willows, Calif., Cooper Medical College, San Francisco, 1894, aged 66, died, February 8

Henry L. Mann, Kansas City, Mo., Starling Medical College, Columbus, Ohio, 1875, aged 75, died, February 13

Oliver H. Fisher, Reading, Pa., University of Pennsylvania School of Medicine, 1872, aged 76, died, February 4

Leroy Gullick, Denver, Baltimore Medical College, Baltimore, 1906, aged 40, died, February 4, of pneumonia

Hamlin Joseph Walters, Lincoln, Neb., Miami Medical College, Cincinnati, 1875, aged 72, died, February 4

Calvin K. Jayne, Madison, Wis., Jefferson Medical College of Philadelphia, 1879, aged 66, died, February 4

John O. Moxley, Lewiston, Idaho (licensed, Idaho, 1899), also a druggist, aged 77, died, February 8

Edward J. Thayer, New York, Rush Medical College, Chicago, 1893, aged 57, died, February 15

Levi D. Allen, Amsterdam, Ohio (licensed, Ohio, 1896), aged 79, died, January 18, of senility

L. W. Early, Phoenix, Ariz. (licensed, years of practice), aged 68, died, January 31

would ask in the interest of public safety is that chiropractors, neuropathists, spondylotherapists, naprapathists, mechano-therapists, and the followers of a score of other healing cults, be well trained in the fundamentals on which the diagnosis and treatment of disease depends. When a man has been thoroughly grounded in those essentials, it is immaterial both to the public and to the medical profession, by what particular method he treats the sick, whether it be by the laying on of hands, by the manipulation of the spine, by massaging of the muscles, or what not. All that

otherwise are reproducing it *verbatim et literatim*. We also give a photographic reproduction of part of the letter in order more clearly to show its obviously illiterate character. Here is the letter:

Sirs, Mister Kirpatic School I want to rite letter an see if i can be kirpatic dr if you can make a kirpatic dr for how much money i got about 2 thousand dolers that my husband got wen he died from the insurance company that paid 3 thousand dolers but i had ode lots of money and funel an everything cost more 1 thousand dolers Could i be kirpatic dr for this much money about 2 thousand dolers in bank i been nurse some and help drs and kirpatic dr say i am strong and pretty an i make a good kirpatic dr since my husband die I can live with my ant here in _____ but it is my money in bank My ant say i have not been in school enuff but my father live on ranch an work wen I was girl and I go to school 3 years My husband die with rpenstis in his side an drs say it to late after they operate an lots of pus in kirpatic dr say he could cure him if i had called him but i did not no it that is why i did not send for him an i want to be kirpatic dr so i can cure rpenstis sometime I been ritin some other kirpatic schools and kirpatic colleges but they send me books and dont rnsr my letters so i can no if you will anser my letter an tell me if you can make me a kirpatic dr on how much money i got an how long it will be if i am a widow 24 years old and i will come right awy

Mrs _____, Texas

In due time the writer of the letter received an answer (which we reproduce in miniature) from the Carver Chiropractic College. The letter ran:

Dear Madam Your most interesting letter stating that you were very much interested in the study of the subject of Chiropractic and reciting the incidence [sic] leading to the death of your husband and the information that you had received from some of your Chiropractic Doctor friends that his death was all unnecessary, had a Chiropractic Doctor waited on him instead of an M. D. I think you are entirely correct however that is an incidence [sic]. That is a condition we must all meet. While it grieves us to give up the ones we love your husband showed forethought in providing for you in a way and I can not think of a better means to put your money to than preparing your self for a real life's work.

Chiropractic is a profession based upon a science. While your education may be limited you have the intelligence and the determination and sufficient education to understand the English language you would have no difficulty in getting a knowledge of this subject so that you could go out and practice and be efficient. You can enter at any time and in eighteen months upon making your grades can be graduated. If you can come at once it will be well for you to do so but if not make your arrangements to be here sure by the first Monday in April. Living conditions here are very reasonable. You will find no difficulty in getting good and economical living quarters. We will do what we can to help you when you come. You will find the student body a fine working virile body. Oklahoma City is a city of 125,000 which offers the advantages of a city of this size and you will enjoy life while here.

I am sending you a catalogue under separate cover which will give you all the information I have not given you in this letter.

Trusting that we will hear from you or see you in a short time, I am

"Very truly,

"CARVER CHIROPRACTIC COLLEGE
H. E. Thompson"

Here we have documentary evidence of the type of education and intelligence that one chiropractic college requires for matriculation. According to this "college" the writer of the letter was sufficiently educated and intelligent to get "a knowledge of this subject [chiropractic] so that you could go out and practice and be efficient."

Oroya Fever—Since at least the time of the Incas, Peru has suffered from a strange disease which has swept over the country from time to time in the form of frightful epidemics, some of which have cost thousands of lives. One of the severest recent outbreaks occurred among the workmen building the Peruvian Central Railway between Lima and Oroya, and it is estimated that at least 7,000 individuals died in it. In 1906 at least one tenth of 2,000 workmen employed building tunnels and bridges on the Central Railway died of the fever, and one bridge in particular, which was the scene of a great many deaths from the disease, has come to be known as the Oroya Fever Bridge. Oroya fever has been constantly confused with other diseases, and it was not until the South American expedition of the Harvard School of Tropical Medicine made an investigation of the disease that some order was brought out of the confusion. Malaria, paratyphoid, and particularly verruga peruviana are the diseases which have been most frequently confused with Oroya fever.—Chandler, Animal Parasites and Human Disease, 1922.

Correspondence

MELANIFEROUS LEUKOCYTES IN THE DIAGNOSIS OF MALARIA

To the Editor—In and about St. Louis, a district in which the manifestations of malaria are protean in character and of endless variety, it seems strange that a means of diagnosis in malaria is ignored that is used by the American government in the Philippines, employed in the malarial zones of the British Empire, and warmly advocated and championed by no less an authority than Sir Patrick Manson. Since the discovery by Laveran, we have been in a position to explain the observation of Loomis, who forty years ago drew attention to the relationship that existed between pigmented leukocytes and malaria. That plasmodial pigment is engulfed by the phagocytes no one will deny, but in scientific proselytizing I have found that to gain assent in reasoning back from effect to cause, from plasmodial pigment to the plasmodium itself, is quite another matter.

In G. A. Gibson's Text Book of Medicine 1311, Manson says: "Pigmented leukocytes are easily made out and are quite as pathognomonic of malaria as the actual plasmodium itself." To those who, after the fashion of the Scotch verdict "not proven," decline to make a positive diagnosis of malaria in the absence of the plasmodium, I would recommend a careful consideration of the foregoing statement. If they will only make a few trials, search unstained blood films for pigmented leukocytes, and control their provisional diagnosis by quinin, I will venture to assert that they will be surprised to find how many cases will prove to be malarial which after blood examinations with most approved staining have been returned as negative by reason of the fact that no plasmodia have been found.

It is not to be expected that plasmodia are always to be found in the peripheral circulation, and therefore it follows that the diagnosis in actual cases of malaria must often rest in abeyance, to the confusion of the physician and the detriment of the patient.

On the other hand, pigmented leukocytes are always to be found in the peripheral circulation in malaria uninfluenced by paroxysm or quinin, and are infallible and ever present guides to diagnosis. In children, especially, in whom usually the paroxysms are not well marked, the search for plasmodia must necessarily often prove futile, whereas the pigmented leukocytes are always present. For myself, I have followed Manson's teaching for the last twenty years, having made almost a thousand blood examinations with this object in view, and can speak with enthusiasm of the labor-saving and time-saving truth of his statement.

The color of the pigment lends itself to a differential diagnosis. Light yellowish or red pigment denotes a simple type of malarial infection, while jet black pigment is indicative of the presence of the estivo-autumnal parasite. The amount of pigment present in the white corpuscles is also helpful in the interpretation of cases.

When the pigment granules in the leukocytes are few in number to the leukocyte, we are necessarily dealing with a case of recent infection. On the other hand, in long standing and chronic cases we should expect to find, and do find, the leukocytes crowded with pigment.

The diagnosis of malaria by Manson's method is simplicity itself. All that is requisite is a microscope with a one sixth inch objective, a film of freshly drawn, unstained blood, and the ability to recognize small black specks of pigment on the white background of the leukocyte. The only possibility of mistake lies in regard to the pigmented leukocytes found in

the subjects of melanotic sarcoma—a differentiation that may be safely ignored

JAMES ROSS CLEMENS, MD, Webster Groves, Mo
Professor of Pediatrics, St Louis
University School of Medicine

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address but these will be omitted on request.

PAN SECRETIN

To the Editor—Is the pan secretin compound manufactured by Henry R Harrower, Glendale Calif useful in the treatment of diabetes?

F P CAPRON, MD Providence R I

ANSWER—Harrower's pan-secretin compound, according to the advertising circular, is "an endocrine combination embodying (1) A specially prepared extract of *Islets of Langerhans* (pancreas tail), rich in its incretory glycolytic product, (2) An acid extract of the duodenal mucosa containing the pancreatic activator *secretin*, and (3) A small dose of desiccated calves *tonsil*." This formula emphasizes the fact that some of the commercial houses are carrying us back to the days of the shotgun nostrum. It would seem hardly necessary to say that such a combination as that quoted above is unscientific and that, so far as we know, there is no scientific evidence to warrant the belief that such a combination is of value. Four years ago the Council on Pharmacy and Chemistry published a report (*THE JOURNAL*, Jan 18, 1919, p 213) on some of the Harrower "pluriglandular mixtures, and gave reasons why such unscientific combinations were not acceptable for New and Nonofficial Remedies. Recently this form of therapy was discussed in the Section on Therapeutics and Pharmacology of the Royal Society of Medicine of London, and Dr Swale Vincent, professor of physiology at the University of London, in the course of his remarks, stated that many foolish notions are abroad, one, for example, being that a preparation from the pancreas tonsil and duodenal mucosa, taken by the mouth, is a remedy for diabetes (*British Medical Journal* 1 105 [Jan 20] 1923). It is a sad reflection on those physicians—the number surely is comparatively small—who allow themselves to be influenced by "literature" that is sent out by commercial houses to sell their products. It appears to be difficult for some men, physicians included, to resist "the will to believe" and to substitute "the will to question" in these matters.

ELIMINATION OF OXYURIS VERMICULARIS

To the Editor—I have tried in the last six or seven months to get rid of pinworms (*Oxyuris vermicularis*) in a child aged 4 years but apparently have not had good results. I have followed very carefully the instructions given in the textbooks of pharmacology. Please outline a treatment for this condition. I have used santonin in one-fourth grain doses. Please omit my name.

V M Ohio

ANSWER—It is not surprising that the use of santonin did not lead to a cure of *Oxyuris vermicularis* infestation. These worms, at least in their adult state, live in the large intestine where an effect from anthelmintics given by mouth cannot be expected. The only justification for the peroral administration of anthelmintics, such as santonin in this condition lies in the fact that the worms live in the small intestine while they are immature and during impregnation. Santonin treatment might therefore be used in conjunction with the much more important treatment by means of enemas.

The chief emphasis of the treatment must be laid on the prevention of reinfection as these worms do not proliferate in the intestine. The difficulty lies in the fact that the female worms, each of which carries many thousands of ova begin to migrate as soon as the ova are ripe. On escaping from the anus, the worms are likely to be crushed most especially because of the itching and consequent scratching they cause. Thus, the ova become smeared over the anal region and sooner or later enter the mouth, chiefly by way of the hands. The reason this infestation is so much more common in children than in adults is that the child is much less cleanly and much more prone to carry unclean hands and fingers into its

mouth. From this it will be seen that the chief enemy to be exterminated is the sex-ripe female, which has its habitat in the large intestine most especially the cecum and the rectum. If we succeed in keeping the rectum free from worms for a sufficient length of time, thereby breaking in on the vicious circle of reinfection, the patient will be cured. Hence, it is necessary to employ for a considerable time—several weeks—daily enemas of soap solution, salt solution dilute vinegar or even plain water. The presence of chemicals in the enema is probably of no importance. Cleanliness is everything. Not only should we aim to prevent infection of the anal region by consistent enema treatment, but we should also keep the hands and the finger nails scrupulously clean. If several children are closely associated, simultaneous treatment of all is necessary in order to prevent mutual reinfection.

ABORTION AND PREMATURE LABOR

To the Editor—What is the prevailing interpretation among the profession of the terms abortion and miscarriage? Some authors such as Hirst define abortion as interruption of pregnancy before the fourth month and miscarriage from the fourth to the seventh while others such as DeLee use application of the term abortion to interruption before the seventh month and refer to miscarriage as a term only popularly used by the laity.

Louis Turr Pittsburgh

ANSWER—"Abortion" is generally used to mean any interruption of pregnancy which occurs before the fetus is viable. Interruptions of pregnancy which occur after the fetus is viable, but before full term, are designated "premature labor." There is no sharp line of division, but as a rule the end of the twenty-eighth week is taken as such. Physicians use the term "miscarriage" but little in scientific discussions, laymen employ it to designate any premature interruption of pregnancy at any time. In law any interruption of pregnancy before full term is designated an abortion.

CAUSE OF SUBNORMAL TEMPERATURE

To the Editor—Please give me the etiology and prognosis of subnormal temperature. Can it be owing to a defect in the endocrine glands?

M S CANFIELD MD Frankfort Ind

ANSWER—The preservation of a normal temperature depends on the balance between heat production and heat dissipation. The former is a function chiefly of the muscles and is the result of metabolic changes. Heat loss is provided for in many ways, chiefly by the exposure of blood in the skin to lower temperatures, and the cooling that comes from sweating and evaporation. A subnormal temperature may result either from diminished heat production or from excessive loss. Under modern conditions of life, with the possibilities for regulating the atmospheric temperature and the skin exposure by variations in the clothing, a subnormal temperature from excessive loss of heat is rare, but may occur from exposure and privation. Diminished heat production occurs in many states of lowered vitality and diminished metabolism, it is likely to be associated with subnormal body temperature. This is almost a normal occurrence in the aged and is common in many conditions of cachexia and inanition such as those of convalescence from fevers and in cancer. All conditions of diminished oxygenation such as congenital heart disease, cardiac failure, alcoholism, jaundice, uremia and pernicious anemia are likely to cause a subnormal temperature. Endocrine gland disorders associated with diminished basal metabolism of any severity are almost inevitably accompanied with subnormal temperature. Among these conditions special reference should be made to Addison's disease (suprarenal deficiency) and myxedema (thyroid insufficiency). Subnormal temperatures are often noted in the early stages of tuberculosis especially in tuberculous meningitis. They also accompany serious shock such as that due to very severe abdominal inflammations or perforations of a hollow viscus.

USE OF INITIALS TO INDICATE MEMBERSHIP IN AN ORGANIZATION

To the Editor—As a matter of curiosity I write to inquire whether it is considered good form to place after one's name initials indicating membership in certain societies for example F.A.C.S. or F.A.C.P. as the case may be. Could one with equal propriety use the letters F.A.M.A. as indicating fellowship in the American Medical Association or other societies varying the letters accordingly?

W F VAN ZELINSKI MD Fort Bragg N C

ANSWER—The use of such initials as F.A.C.S., F.A.C.P. or F.A.M.A. to indicate membership in an organization is purely a matter of taste.

Medical Education, Registration and
Hospital Service

COMING EXAMINATIONS

IDAHO Boise April 4 Dir Mr Harry L Fisher Boise
IOWA Des Moines, March 8 10 Sec Dr Rodney P Fagen State
House Des Moines
MAINE Portland March 13 14 Act Sec, Dr Adam P Leighton
192 State St, Portland
MONTANA Helena April 3 Sec Dr S A Cooney Power Bldg,
Helena
NEW HAMPSHIRE Concord, March 9 10 Sec, Dr Charles Duncan,
Concord

FURTHER DATA ON THE ALLEGED LACK OF
PHYSICIANS AND THE DISTRIBUTION
OF IRREGULAR PRACTITIONERS

E P LYON, PH D, M D
Dean University of Minnesota Medical School
MINNEAPOLIS

In *Minnesota Medicine*, February, 1923, I published certain facts with regard to the distribution and supposed need of physicians in Minnesota and neighboring states. Something concerning the distribution of osteopaths and chiropractors was also indicated. These facts were obtained from a study of notices of locations for physicians on file in my office and from a study of the American Medical Association Directory, in comparison with a list of incorporated places in Minnesota as reported by the United States census of 1920.

My conclusions were that a real lack of physicians exists in the Northwest only in a few new and sparsely settled communities, and that the increase in irregulars is not due to a lack of physicians, the osteopaths and chiropractors being located where there are already abundant physicians and not where there are no physicians.

It occurred to me that further light on the questions in which I was interested might be obtained by direct inquiries addressed to the villages of this state. A return post-card was sent to every place in Minnesota with a population between 100 and 1,000. There were 540 places on the list, and 381 replies, or 70 per cent, were received.

The return card bore information as to the (1) number of physicians (M D's), (2) number of osteopaths, and (3) number of chiropractors, with a column for remarks.

The results are summarized in the accompanying table.

SUMMARY OF REPLIES

Population of Place	Number of Replies	Have Physl clans (M D)	Per centge Having Physi clans	Have Osteo path	Have Chlro practof	Osteopath or Chiropractor but No Regular Physi clans
From 100 to 199	61	6	10	0	0	0
200 to 299	87	24	28	0	1	1
300 to 399	70	3	67	0	2	0
100 to 399	227	93	41	0	3	1
400 to 499	40	37	93	1	4	1
500 to 599	23	32	97	0	2	0
600 to 699	22	20	91	0	1	0
700 to 799	27	26	97	1	5	0
800 to 899	17	16	94	0	3	0
900 to 999	10	10	100	0	4	0
400 to 999	104	146	90	2	19	1

It will be noted that 95 per cent of places from 400 to 999 population have physicians. Above 900, all places have physicians. Only two places have osteopaths or chiropractors unless they also have regular physicians. In fact, while 239 places in Minnesota or from 100 to 999 population have physicians, only twenty one irregulars are found in the whole

381 places replying to the questionnaire. The sectarians are in the larger places—places above 1,000 in population.

In my opinion, these figures substantiate the view that there is no widespread lack of physicians, no ground for the statement that osteopathy and chiropractic are filling a need of physicians, no necessity for lowering standards or increasing registration in medical schools.

The line labeled "Remarks" brought out a variety of comments. Many small places without physicians asserted a need for physicians, or stated that good openings existed. Sixteen places of from 100 to 199 population, and twenty-seven of from 200 to 299 made such statements. As soon as one reaches a population of 300 these requests become less, there being twelve requests from towns of from 300 to 399, two requests from towns of from 400 to 499, and none from towns of from 500 to 999.

On the other hand, two small towns with two physicians each make the comment "We have one doctor to spare."

The places of from 200 to 299 present the most urgent appeals. Several state that they have previously had physicians, and indicate irritation that they cannot get them again. Says one "Nearest town, 10 miles. We need a doctor and can support one of the right kind. The doctors in this part of the country have all moved to the county seat, and we can either die or be robbed. Just a matter of choice with us. However, it is fine for the doctors." Another says "We have had several doctors locate in the village in the last twenty years. All made a stake and then moved away to some larger place."

These comments indicate that the farming population is not adjusted to the good roads-automobile-telephone combination. Furthermore, with distance, fees have increased and the farmer objects to that. While country patients may be as well cared for as in the days when physicians were more scattered, the people are not so well satisfied. Probably much of the talk of need for physicians arises from this fact.

Michigan Reciprocity Report

Dr Beverly D Harison, secretary, Michigan State Board of Registration, reports that from Jan 1, 1922, to Jan 1, 1923, eighty-four candidates were licensed by reciprocity. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
University of Alabama	(1911)	(1911)	Georgia
University of Arkansas	(1917)	(1917)	Arkansas
Yale University	(1903)	(1903)	Connecticut
Georgetown University	(1902)	(1902)	Dist Colum
Howard University	(1895)	(1895)	Iowa
College of Phys and Surg Chicago	(1895)	(1905)	Illinois
Bennett College of Eclectic Medicine and Surgery	(1907)	(1907)	Illinois
Hahnemann Medical College and Hosp of Chicago	(1906)	(1906)	Illinois
Loyola University	(1922)	(1922)	Illinois
Northwestern University	(1910)	(1921)	Illinois
Rush Medical College	(1900)	(1916)	Illinois
(1915) Arizona	(1917)	(1920)	Illinois
University of Illinois	(1912)	(1913)	Illinois
Indiana University	(1912)	(1913)	Illinois
Medical College of Indiana	(1892)	(1892)	Indiana
State University of Iowa College of Medicine	(1920)	(1920)	Iowa
Hospital College of Medicine Louisville	(1900)	(1900)	Tennessee
Louisville Medical College	(1906)	(1906)	Indiana
University of Louisville	(1910)	(1910)	Kentucky
Tulane University	(1910)	(1910)	Louisiana
Medical School of Maine	(1907)	(1907)	Maine
College of Physicians and Surgeons Baltimore	(1913)	(1913)	Maryland
Johns Hopkins University	(1918)	(1918)	Maryland
Maryland Medical College	(1900)	(1900)	Maryland
Harvard University	(1908)	(1908)	Ohio
Tufts College Medical School	(1917)	(1917)	Mass
University of Minnesota Medical School	(1915)	(1915)	Minnesota
Washington University	(1919)	(1919)	Missouri
Barnes Medical College	(1898)	(1898)	Kentucky
Ensworth Medical College	(1903)	(1903)	Oklahoma
Kansas City Medical College	(1891)	(1891)	Nebraska
St Louis College of Physicians and Surgeons	(1918)	(1918)	Missouri
St Louis University School of Medicine	(1911)	(1918)	Missouri
Creighton University	(1911)	(1918)	Missouri
Columbia University	(1916)	(1916)	New York
University of Bellevue Hospital Medical College	(1920)	(1920)	New York
University of Buffalo	(1891)	(1910)	New York
Leonard Medical College	(1909)	(1909)	Georgia

Eclectic Medical College	(1899)	Ohio
Medical College of Ohio	(1897)	Indiana
Ohio State University College of Medicine	(1910)	Ohio
Starling Medical College	(1891)	Illinois
University of Cincinnati	(1921)	Ohio
Western Reserve University	(1909)	Mass
Jefferson Medical College	(1920)	Virginia
Medico-Chirurgical College of Philadelphia	(1915)	Penna
Temple University	(1920)	Delaware
Mcharry Medical College	(1909)	Georgia
University of Vermont	(1917)	Vermont
University of Virginia	(1918)	Iowa
McGill University	(1914) New York	(1921) Maryland
University of Toronto	(1910)	Illinois
University of Vienna Austria	(1883)*	Illinois
University of Helsinki	(1907)*	Mass
University of Budapest Hungary	(1915)*	Ohio
Catholic University Louvain Belgium	(1894)*	Mass

* Graduation not verified

Book Notices

PREMATURE AND CONGENITALLY DISEASED INFANTS By Julius H Hess MD Professor and Head of the Division of Pediatrics University of Illinois College of Medicine Cloth Price \$5 50 Pp 397, with 189 illustrations Philadelphia Lea & Febiger 1922

Medicine has become so enormous in its scope and its facts, and hypotheses concerning disease have accumulated to such an extent that the abbreviations necessary in the general textbooks fall short of the necessary knowledge of the diseases of which these textbooks treat. It is becoming increasingly necessary, therefore, to consult monographs to obtain an adequate idea of any subject in which one may be interested. It is to meet just such a need that this volume appears. It is the only book in English, and the only book of any claim to prominence, if, indeed, it is not the only book that has ever appeared on the subject. In view of the absence of background, it is surprising that the writer should have assembled and systematized his facts so well. The book is well written and beautifully illustrated, what is more, the illustrations are to the point. The literature has evidently been studied thoroughly, though it is not quoted exhaustively. The book begins with a short chapter on definitions, followed by one on classification which takes up the etiology of prematurity. This is followed by an excellent chapter on physiology. One is struck after reading this by the fact that our knowledge of the physiology of the premature infant is certainly very limited, although the author has evidently used every endeavor to get at all the facts. In this chapter the roentgen-ray examination of the skeleton presents a new feature and is thoroughly covered. In the clinical chapters one is struck by the great detail in the portions devoted to treatment, a necessary thing since the subject is not well understood by the average physician. On the whole, the book is conservative, well written and instructive. It deals with a subject about which we know little but such a book is calculated to arouse interest and therefore is of value not only for the practical information it contains, but also because of the increased interest it is likely to arouse in the subject.

DISEASES OF THE HEART A Handbook for Students and Practitioners By I HARRIS MD LRCP Honorary Physician in Charge Cardiographic Department Liverpool Northern Hospital Cloth Price \$3 50 Pp 196 with 49 illustrations New York William Wood & Co 1922

This book is supposed to give a complete account of the diseases of the heart and it was written for the student and the practitioner. The author did not in either of these respects carry out his intentions. The book is far from being, even in an abbreviated form, a complete presentation of our present knowledge of the subject. Many essentials are omitted: the discussion of chronic adhesive pericarditis may be cited as an example. No mention is made of the marked increase in the size of the heart or of the perihepatitis with the associated ascites that is so often the outstanding feature in those patients in whom the condition is diagnosed during life. The author is not always in accord with recognized authorities on points generally accepted. Adam-Stokes syndrome is not considered under the subject of heart block. The mechanism of this disorder is explained on the basis of an increase in the refractory period of the ventricle rather than attributed to a defective conduction of the auriculo-

ventricular bundle. The subject matter is poorly presented. The reader is often in doubt as to the point the author wishes to make. This feature alone would make the book undesirable for the student.

GREEK BIOLOGY AND MEDICINE By Henry Osborn Taylor Cloth Price \$1 50 Pp 151 Boston Marshall Jones Company 1922

GREEK BIOLOGY AND GREEK MEDICINE By Charles Singer Cloth Price \$1 Pp 128 with 8 illustrations New York Oxford University Press 1922

Dr Taylor's volume is part of a series on "Our Debt to Greece and Rome." It comes at a time when it must be inevitably compared with a similar recently published book by Charles Singer of England. The book by Taylor is divided into sections on early biology, the hippocratic writings, Aristotle's biology, progress in anatomy, the system of Galen, and linkage with our modern times. It is thus a series of orderly essays progressing according to a definite scheme, and thereby excellent teaching material. On the other hand, the book by Singer is a delightfully written essay, easily readable, wandering almost nonchalantly among the achievements of the ancient Greeks, picking up a thought or an example here and there, and, on the whole, presenting an excellent picture of the medicine of the classic Greek school. In both books one is confronted by the fact that modern authors incline to read into the philosophy of the ancients knowledge of facts that they could not possibly have known. Such synthesis is so simple as to be exceedingly attractive but it is likely to be a source of historical error. It is Taylor's belief that the Greeks recognized particularly the fundamental fact in biology and medicine that the organic is distinguishable from the inorganic by its power to heal itself when diseased, or, in other words, that Nature is the greatest healer, and that, regardless of our many discoveries today, we must return to this conclusion. After all, however, we have come a long way in understanding the methods by which the beneficent Nature brings the healing about, and our advances of the last half century need not be slighted in our admiration for the far-sightedness of the ancient observers.

UNIVERSITY OF IOWA STUDIES IN PSYCHOLOGY Psychological Monographs Vol VIII Edited by Carl E Scashore Pp 378 Princeton Psychological Review Company 1922

In this monograph are fourteen articles on sound perception, two on measurements of motor control, and one on measurement of coordination of eye and hand. In these articles instruments, technique and norms are discussed. As such they serve as a point of comparison and departure for studies of the diseased. The results of some of the tests of tone perception show a wide range between individuals. The methods and tests are rather too elaborate to lead to their use in the medical clinical laboratories.

YEAR BOOK OF PHARMACY Comprising Abstracts of Papers Relating to Pharmacy Materia Medica and Chemistry Contributed to British and Foreign Journals from July 1 1921 to June 30 1922 with the Transactions of the British Pharmaceutical Conference at Its Fifty Ninth Annual Meeting London J & A Churchill 1922

The British Pharmaceutical Association is to be congratulated on the prompt publication of the annual year book. While it does not contain the abstracts for all the year 1922 it covers a large portion of the year and includes the 1921 abstracts left over from the previous edition. This is in favorable contrast with the American Pharmaceutical Association which has just issued the year book for 1920. The British book contains abstracts in the usual divisions such as alkaloids bacteriologic and clinical tests, essential oil plant analysis newer remedies pharmacology and therapeutics and other phases affecting pharmacy. About one fifth of the book is devoted to the proceedings and scientific contributions of the British Pharmaceutical Conference.

ENCEPHALITE HYPERTHERMIQUE Guerie a Lourdes 1922 Observation Medicale avec Courbe de Temperature H et J Bon Paper Price 3 francs 1 p 23 with 3 figures Paris A Maloine et Fils, 1923

This is plainly faith cure propaganda and no scientific medical report which is devoid of no good reason offered for the diagnosis.

Medicolegal

Agreement Creating a Partnership

(*Runo v Rothschild (Mich.) 189 N. W. R. 183*)

The Supreme Court of Michigan says that the plaintiff made an affidavit in which he stated that prior to a certain date he had practiced his profession as an urologist, and the defendant was his assistant. On the date mentioned the plaintiff offered to permit the defendant to continue to occupy the suite of offices, to make use of the laboratory and to practice his profession for the plaintiff's patients, the income from practice and laboratory work to be used to pay all the bills necessary to the maintenance of the offices, the practice and the laboratory, after which the proceeds of the income were to be divided share and share alike. The defendant accepted the offer, and entered on the performance of the agreement, but subsequently failed to pay certain bills and make proper division of the proceeds, it was alleged.

Did this agreement imply a mere hiring of the defendant or a partnership between the parties? The defendant contended that it indicated a partnership, and that therefore the plaintiff's remedy was by way of an accounting, and not an action at law and for the arrest of his copartner, with which the court agrees, in affirming a judgment dismissing this action at law when there was such an arrest. The affidavit, the court says, showed an agreement under which the defendant was to take charge of the plaintiff's offices and equipment and carry on the business for their joint benefit, pay all expenses out of the income, and divide the profits with the plaintiff. This severed their previous relations, under which the defendant was but an employee, and constituted the parties copartners.

While the law has always considered the partnership relation one of contract and intention, it determines the status of the parties from their agreement, and draws their intention from their acts. The defendant had the right to manage and control the business, and his share of the profits was not in the nature of compensation for services rendered to the plaintiff. The plaintiff did not hire the defendant to carry on his practice, but entered into relations with him wholly inconsistent with those of master and servant or employer and employee. The defendant was empowered to act for both in the management of the business, and both were liable for the expenses if the income was not sufficient to pay the same. This was not a mere joint adventure, but a community of interests, with all the essential incidents of partnership rights and liabilities. The agreement delegated to the defendant the power and authority to manage and control practice and laboratory for their common benefit and profit. The plaintiff contributed toward the earning of profits, in the practice to be conducted by the defendant, his offices, laboratory and equipment, and his clientele, and the defendant contributed his time, labor and skill, and such new business as he could command, and these contributions were dedicated to the enterprise for the profits to be derived therefrom.

Validity of Award Based on Condition When Discharged by Physicians

(*London Guarantee & Accident Co. Limited et al v Industrial Commission et al (Colo.) 210 Pac. R. 70*)

The Supreme Court of Colorado says that a claimant for compensation under the workmen's compensation act of that state was injured, Aug. 8, 1919. September 19 a voluntary agreement, which the state industrial commission approved, was entered into by the insurance carrier and the claimant, for the payment to him of \$10 a week for ninety-two weeks. The case was then set down for hearing to determine whether the claimant was entitled to any further compensation and the extent of his permanent disability, if any. It plainly appeared that at the end of sixty days following the accident the claimant was told by the attending physicians furnished by the employer or the insurance carrier that they could do nothing further for him. Being thus left to shift for himself he consulted surgeons, who performed two serious and

unusual operations, the result of which was an improvement in his condition. His health was not restored, nor did he regain his normal ability to perform manual labor. On the final hearing by the industrial commission, in the latter part of 1921, it appeared to that body, and it so found, that the claimant's disability, at the expiration of the sixty days from the time of the accident, was 80 per cent, and would have so continued had not these operations been performed, but that after the operations were performed the permanent result of the accident was still a loss of 33 1/3 per cent of the use of his right leg. Under these circumstances, the award for permanent disability was computed on the basis of an 80 per cent loss of the use of the claimant's leg. None of it was for medical attention, but for a permanent disability actually existing when the physicians of the employer or insurance carrier discharged him at the end of the sixty-day period. The making of this additional compensation which might be equal to, or greater than, the amount of the claimant's expenses incurred for the two operations, was not equivalent to an award by the commission for medical attention in excess of the sum of \$200, the maximum allowed by the statute for medical attention during the sixty days immediately following the accident, nor was it equivalent to an award for attention given after the period of sixty days following the accident. Neither the statement that the commission's award for increased permanent disability was an indirect method of payment for medical attention beyond the period of sixty days following the accident, nor one that the award compelled the employer and insurance carrier to pay for an assumed disability which the claimant did not suffer, was borne out by the findings of fact. The statute authorizes the commission, of its own motion, at any time, after notice to the parties interested, to review any award previously made, and on such review to make another award diminishing, maintaining, or increasing the compensation previously awarded, subject to the maximum and minimum provided in the act. The commission, therefore, was authorized in this case to increase the award which it first tentatively made, and had the right to fix the permanent disability as of the date when the physicians of the employer and insurance carrier notified the claimant that they were unable to do anything further for him. If the theory of the employer and insurance carrier to the contrary were sustained, it would be equivalent to penalizing the claimant for taking measures to protect himself by diminishing his disability to perform labor. Considering the wide discretion vested in the commission, and the spirit and purpose of the statute, the court holds that the commission acted humanely as well as fairly to the employer and the insurance carrier, in reaching its ultimate conclusion. Wherefore, a judgment approving the findings and the award is affirmed.

Society Proceedings

COMING MEETINGS

Alabama Medical Association of the State of Mobile April 17-20
Dr. H. G. Perry State Board of Health Montgomery, Secretary
American Association of Anatomists Chicago March 28-30 Dr. Lewis H. Weed Johns Hopkins Medical School Baltimore Secretary
American Association of Pathologists and Bacteriologists Boston March 29-30 Dr. H. T. Karsner Lakeside Hospital Cleveland Secretary
American Association of Physicians Atlantic City May 1-3 Dr. Thomas McCrae 1929 Spruce Street Philadelphia Secretary
American Society for Clinical Investigation Atlantic City April 30
Dr. James H. Means 15 Chestnut Street Boston Secretary
Georgia Medical Association of Savannah May 2-4 Dr. Allen H. Bunce Healey Building Atlanta Secretary
Kan. as Medical Society Kansas City May 2-4 Dr. J. F. Hassig, 800 Minnesota Avenue Kansas City Secretary
Louisiana State Medical Society New Orleans April 10-12 Dr. P. T. Talbot 1551 Canal Street New Orleans Secretary
Maryland Medical and Surgical Faculty of Baltimore April 24-26
Dr. J. A. Chatard 1211 Cathedral Street Baltimore Secretary
North Carolina Medical Society of the State of Asheville April 17-19
Dr. L. B. McBrayer Sanatorium Secretary
Ohio State Medical Association Dayton May 1-3 Mr. D. K. Martin, 131 East State Street Columbus Secretary
South Carolina Medical Association Charleston, April 17-19 Dr. Edgar A. Hines Seneca Secretary
Tennessee State Medical Association Nashville April 10-12 Dr. Larkin Smith 154 Eighth Avenue N. Nashville Secretary
Western Electro-Therapeutic Association Kansas City Mo., April 19-20
Dr. Charles Wood Fassett 115 E. 31st Street Kansas City, Secretary

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below

American Journal of Ophthalmology, Chicago

January 1923, 6, No 1

- Mists and Halos of Glaucoma R H Elliot London England—p 1
Ophthalmoscopy by Red Free Light A S Green and L D Green
San Francisco—p 16
Formalized Cartilage Implants Following Enucleation W B Doherty
New York—p 19
Action of Miotic Drugs on Diseased Intraocular Structures R J
Curdy, Kansas City Mo—p 22
Accommodation Rule with New Features C Berens Jr New York
—p 26
Etiology of Sympathetic Ophthalmia H H Stark El Paso Tex—p 29
Graduate Teaching of Ophthalmology L Post St Louis—p 33
Primordial Conjunctivitis with Eosinophilia T W Weaver and W
G Gillett Wichita Kan—p 36
Unsuspected Foreign Body in Lens I A Abrahamson Cincinnati—
p 37
Indirect Rupture of Sclera A Bray Philadelphia—p 38

American Review of Tuberculosis, Baltimore

January 1923 6 No 11

- Clinical Pathology of Pulmonary Tuberculosis in Adults Analysis of
Five Hundred Necropsies J Walsh Philadelphia—p 975
Statistical Study of Decline in Number of Deaths from Tuberculosis
of Lungs in Boston 1898-1921 J O Emerson Boston—p 994
*Pulmonary Tuberculosis Among Negroes H G Carter Burkeville
Va—p 1002
*Chronic Bronchiectasis Terminating in Phthisis Florida H A Bray
New York—p 1008
Mechanism of Compensation in Pulmonary Tuberculosis and Its Rela-
tion to Physical Signs H A Bray New York—p 1013
*Complement Fixation Reaction as Applied to Tuberculosis J D
Aronson and P A Lewis Philadelphia—p 1024
*Resistance to Experimental Peritoneal Tuberculosis Following Oil
Injections W F Petersen and S A Levinson Chicago—p 1035
Preservation of Cultures of Human and Bovine Tubercle Bacilli
H J Corper and H Gauss Denver—p 1040
*Periodic Variations in Basal Metabolism Rate in Tuberculous Women
P H Pierson San Francisco—p 1046

Pulmonary Tuberculosis Among Negroes—Carter records the results of treatment of pulmonary tuberculosis in negroes in such a way that an intelligent comparison can be made with those of institutions admitting whites. The results at Piedmont Sanatorium prove beyond question that the negro, although he shows less resistance against the disease than the white man, will respond to treatment for pulmonary tuberculosis, and that if treatment is begun in the early stages of the disease the large percentage of them will continue well. Syphilis as a complication of tuberculosis renders the prognosis more grave than simple tuberculous infection. Syphilis as a disease of the lung has been demonstrated in four clear cut examples in a series of sixteen cases in which the sputum was negative and the Wassermann was positive. If the "young adult type" of tuberculosis is indicative of lessened resistance on account of absence of contact then the Piedmont records will go to show that the high death rate from pulmonary tuberculosis among negroes is due to absence of contact rather than unsanitary surroundings. The records continue to show that the mulatto has a better resistance against pulmonary tuberculosis than the pure bred negro.

Chronic Bronchiectasis Terminating in Acute Phthisis—Bry's patient presented evidence of a localized pulmonary lesion at the base of the left lung for a period of at least seven years. This was attended by productive cough and mucopurulent sputum, partly residual and negative for tubercle bacilli. The woman's features were somewhat cyanosed and her fingers clubbed. These clinical manifestations suggested some condition other than tuberculosis probably bronchiectasis. This suspicion was heightened by the absence of any striking change in the clinical manifestations of the disease during this period by the negative radiographic examination, and finally by the contrast in the clinical picture, physical and radiographic findings when the condition became complicated by phthisis florida.

Complement Fixation Reaction in Tuberculosis—Aronson and Lewis believe that they are justified in concluding that

in the recent past those who have worked with complement fixation in tuberculosis have given undue weight to the antigen and have paid too little attention to other fundamental factors concerned in the reaction. They found no evidence of more than one antigenic substance, and this was found in acceptable form in several preparations. Petroff's glycerin extract, Besredka's antigen, the alcoholic extract of the tubercle bacillus used by Craig, the simple suspension of the living tubercle bacillus and doubtless the "autolysate" of Corper are of essentially equal worth. The most important feature of the reaction is that the time of primary incubation is longer than in the classical Wassermann reaction (from two to four hours, as against one-half hour). The longer time is necessary to secure comparable results with the bacillary suspension which becomes less practical on this account, as well as by reason of its limited keeping qualities. The authors assert that their experience has continued to show that the application of the reaction in practice is limited by the fact that about 10 per cent of clinically normal persons give a positive reaction. This is not materially different with any antigen.

Resistance to Experimental Peritoneal Tuberculosis Following Oil Injections—Petersen and Levinson found that the experimental intraperitoneal injection of oils (sperm oil, peanut oil, liquid petrolatum) in rabbits, following an intraperitoneal inoculation with human tubercle bacilli, occasionally prevents the development of local tubercles in the peritoneum but does not alter the development or course of the tuberculosis in other organs. When bovine strains were used this effect was not apparent. Inasmuch as liquid petrolatum seems as effective as the animal or vegetable oils used, the effect is probably due to the mild peritoneal irritation brought about by the oils which can be demonstrated by histologic examination. In view of the fact that olive oil has been observed to influence the implantation and development of cancer transplants (Nakahara) the authors suggest that it is probable that the mechanism involved in this increased resistance is similar in tuberculosis and cancer.

Variations in Basal Metabolism in Tuberculous Women—Pierson found a menstrual or premenstrual rise in the basal metabolic rate in tuberculous women followed by a fall during the postmenstrual period in the few cases studied. He thinks that this variation may explain some of the differences in opinion as to the basal metabolic rate in tuberculosis and should be taken into account when figures are presented regarding this test. There is added evidence that the thyroid or several endocrine glands are involved in the ability of an individual, or a family, to resist tuberculosis.

Archives of Surgery, Chicago

January 1923 6 No 1 Part 1

- *Bile Factor in Pancreatitis F C Mann and A S Giordano Rochester Minn—p 1
*End Results of Five Hundred Cases of Chronic Appendicitis J B Deaver and I S Ravdin Philadelphia—p 31
Experimental Traumatic Shock VI Action of Ether on Circulation in Traumatic Shock M Cattell Boston—p 41
Roentgenologic Aspect of Chronic Appendicitis H K Pancoast Philadelphia—p 85
*Relation of Heart Pericardium and Heart Valves to Anterior Chest Wall L T LeWald, New York—p 89
Value of Pericardiectomy in Diagnosis and Treatment J B Roberts Philadelphia—p 101
Chronic Noninflammatory Lesions of Knee Joint M S Henderson Rochester Minn—p 118
*Gastrojejunal Ulcer Experimental Study A H Montgomery Chicago—p 136
*Mesenteric Vascular Occlusion L Brady Baltimore—p 15
Bilateral Chronic Open Pneumothorax Cured by Negative Tension Report of Case E M Eberts Montreal Canada—p 168

Bile Factor in Pancreatitis—The bile factor in pancreatitis was investigated by Mann and Giordano from two chief aspects the anatomic and the experimental. The investigation proved that an anatomic and physiologic basis for the theory that reflux of bile may occur in the pancreatic duct does exist. The evidence indicates that such a reflux of bile may rarely be the cause of chronic pancreatitis. The possibility of bringing into play a physiologic mechanism which can infiltrate the pancreas with sterile bile to actually to produce acute pancreatitis. Granted that the necessary

logic factors are present and that the reflux of sterile bile under such conditions does produce pancreatitis, such cause for the condition must be very rare, few cases are on record. It is emphasized that any mechanism which will afford the possibility for bile to pass into the pancreatic duct will also obstruct the flow of pancreatic juice. Furthermore, bile has been found in the pancreatic duct without acute pancreatitis. It is urged that pathologists should, in cases of pancreatitis, examine the relationship of the two ducts to the duodenum and to each other in order to determine whether it is anatomically possible for bile to pass into the pancreatic duct. These observations prove conclusively that the explanation of the cause of most cases of pancreatitis must be sought elsewhere.

End Results of Chronic Appendicitis—The analysis made by Deaver and Ravdin shows that the most frequent symptom of chronic appendicitis is periodic pain in the right iliac fossa, and in a patient carefully studied this symptom is suggestive. The symptoms in seven cases of tuberculous appendicitis and one case of carcinoma did not differ in any way from the remaining cases in the series. The mortality in the cases in which operation was performed during the quiescent period was 0.27 per cent, while in the cases in which operation was performed during the acute stage it was 27 per cent. There seems to be a definite relation between appendicitis and upper abdominal disease and between appendicitis and pelvic disease. Hematemesis may be a manifestation of chronic appendicitis. Of the patients followed up, 83.1 per cent were entirely relieved, 9.7 per cent were partially relieved and 7.07 per cent were unrelieved. The latter group was partly due to pathologic conditions unrecognized because of faulty study and exploration.

Action of Ether on Circulation in Traumatic Shock—Cattell discusses the effects of ether on the blood pressure, its action on the heart, vasomotor system and blood vessels, and from the point of view of the circulation as a whole, together with a consideration of the changes occurring in shock. In the normal animal, the inhalation of strong ether results in a sudden drop in the arterial pressure, which is quite temporary. As the anesthesia deepens, the pressure gradually recovers until, by the time the eye reflex has disappeared, it may have returned to its original level. In the shocked animal, there is no recovery of the blood pressure after the primary fall, and the pressure continues to fall to zero even before the eye reflex disappears. Observation on the heart volume of intact cats, and on the contractions of the isolated cold blooded heart, together with deductions from blood pressure records, showed that the administration of ether, from its very beginning, results in a depression of the heart and a decrease in its output, which is sufficient to account for the fall in pressure in both the normal and the shocked animals. Determinations of leg volume with a plethysmograph, perfusion rate measurements, and results obtained by the injection of ether directly into the circulation, together with the form of the blood pressure curves, indicate that ether causes a contraction of the peripheral vessels. In the blood pressure curves resulting from the administration of ether in the normal animal, the primary drop is probably due to an influence on the heart, and the subsequent recovery of the blood pressure, to a compensatory vasoconstriction. In the shocked animal, no evidence of a vasoconstriction produced by ether was obtained and pressor effects from asphyxia or sensory nerve stimulation become less or are entirely absent. The condition of ether sensitiveness is brought about by any circumstances which tend to depress the general condition of the animal, such as low blood pressure, hemorrhage, severe operations or the injection of acid into the circulation. The cause of the greater depressing influence of ether on the blood pressure in shock appears to be due to a disturbance of the vasomotor system. The usual compensatory constriction no longer occurs to offset the decreased output of the heart and the pressure continues to fall.

Determining Relation of Heart and Its Valves—LeWald describes the method he used to make teleroentgenograms which would show the exact position of the heart valves. Cadavers were used in the first study. The position of the heart valves was established by means of wire loops.

Pericardiotomy for Diagnostic Purposes—Experience in pericardial surgery has given Roberts strong evidence in support of the opinion that careful investigation should always be made by percussion, auscultation and roentgenographic study before resort is had to tapping, or other surgical attacks, as the line of treatment in suspected pathologic conditions of the heart. Recent researches and numerous war experiences in treatment of thoracic wounds and the acknowledged innocuousness of pericardial incisions indicate that it may be at times not only wise, but imperative, deliberately to open the sac of the heart for diagnosis.

Experimentally Produced Gastrojejunal Ulcer—Of sixty-three dogs that were subjected to a gastro-enterostomy by Montgomery (the pylorus being left patent), a definite gastrojejunal ulcer was found in four. In every case the ulcer was a fairly large, solitary lesion, somewhat indurated and well defined. Macroscopically and microscopically, it showed all the characteristics of a chronic ulcer. These ulcers have a tendency to perforate and are similar in other respects to gastrojejunal ulcers found in man. They seem to occur following hematomas that affect the jejunal mucous membrane at the cardiac angle of the stoma where suturing and hemostasis are imperfect. Hematomas situated at other places along the suture line may be absorbed and produce no damage. These ulcers occurred independent of the kind of suture material employed.

Mesenteric Vascular Occlusion—Fourteen instances of mesenteric vascular occlusion are analyzed by Brady. In three cases there was no formation of an intestinal infarction and the mesenteric thrombosis was discovered only at necropsy. In thirteen cases, the superior mesenteric vessels were involved, in one instance the inferior. The mesenteric arteries were involved in four cases, the veins in eight. In two cases it was impossible to tell which of the two caused the infarction. These findings are at variance with those of most observers, the majority of whom found the veins involved much less frequently than the arteries. When the mesenteric veins are occluded, it is always due to thrombosis. Either embolism or thrombosis may cause occlusion of the mesenteric arteries. In ten of the cases, the following etiologic factors were found (in four cases no cause for the occurrence of the thrombosis could be found): endocarditis with aortic insufficiency and stenosis clinically, marked arteriosclerosis, and cirrhosis of the liver, two cases each; Raynaud's disease, carcinoma of the pancreas with metastases to the liver and neighboring glands, polycythemia, and partially strangulated inguinal hernia with abscess formation, one case each. In all of the cases there had been a history of abdominal pain and vomiting, and on examination abdominal tenderness and muscle spasm were demonstrated. The majority of the patients, even from the first, were greatly prostrated and looked ill. The picture is indistinguishable from that of acute intestinal obstruction due to causes other than mesenteric thrombosis. Brady says that there is just one method of treatment—immediate laparotomy.

January 1923 6, No 1 Part 2

- Present and Future in Thoracic Surgery S. Robinson Santa Barbara Calif.—p. 247
- *Surgical Treatment of Esophagus H. Fischer New York—p. 256
- *Posterior Mediastinotomy H. Lilienthal New York—p. 274
- *Teratoma of Right Chest Cavity Report of Case W. Whittemore Boston—p. 282
- Radium Needle for Esophagoscope S. Hankauer New York—p. 288
- *Differential Diagnosis Between Tuberculosis and Lung Abscess L. T. LeWald and N. W. Green New York—p. 303
- *Lung Abscess A. L. Lockwood Toronto—p. 314
- *Surgical Treatment of Bronchiectasis Report of Three Cases of Removal of Lobe of Lung E. A. Graham St. Louis—p. 321
- *Lung Abscess G. J. Heuer Cincinnati and P. M. MacCready Baltimore—p. 337
- Interrelation Hip and End Results of Chronic Suppurative Diseases of Lungs W. S. Lemon Rochester Minn.—p. 343
- Fibrosis of Lung Following Ligation of Pulmonary Artery Combined with Phrenicotomy and Following Partial Occlusion of Pulmonary Veins K. Schlaepfer Baltimore—p. 358
- *Lung Suppuration and Its Treatment W. McEer New York—p. 361

Surgical Treatment of Esophagus—While the results of today in this field are not such that one should be boastful about them, Fischer believes that a more hopeful attitude is justified. So far, only in cases of carcinoma of the cardiac

portion of the esophagus has the patient recuperated from the operation and lived

Posterior Mediastinotomy—The principle on which the approach made by Lilienthal depends is that of the retraction of the divided ribs at right angles to their long direction, shingling them, one on the other, thus making the deep exposure from below upward, the extent of available space being determined by the length of the wound, especially that portion which divides the intercostal extrapleural structures. Lilienthal asserts that by the methods he has worked out, the exposure is so complete that not only the posterior but also the middle and superior divisions of the mediastinum can be reached with facility and with comparative safety.

Lung Abscess—Twelve cases form the basis of the report made by LeWald and Green. Eight patients were operated on and the diagnosis established, all of these recovered. Four were not operated on for lung abscess, and, of these three recovered and one died. The disease in these cases had been either postpneumonic or postoperative. Two cases followed tonsillectomy. One case followed operation on the gall-bladder. In none of this series was a foreign body demonstrated as the cause. The outstanding symptom was a persistent cough with profuse sputum with a fetid odor, accompanied by a loss of weight.

Lung Abscess—Contrary to the opinion of early writers that abscess of the lung is a common sequel to lobar pneumonia, a survey made by Lockwood of cases reported during the last century indicates that it is a rare sequel. Lockwood is convinced that surgery should not be employed so soon as the diagnosis has been made, except as indicated. Instead, thorough medical treatment, with postural rest and drainage should be instituted. When this fails, pneumothorax should be produced in selected cases, and surgery reserved for those patients who do not respond to the other two methods.

Lobectomy for Bronchiectasis—Lobectomy was successfully performed by Graham in three cases of bronchiectasis. He thinks that in advanced cases it is the only method which seems to offer a chance of complete relief from all symptoms.

Chronic Lung Abscess—A study made by Heuer and MacCready of the late results in sixty-two cases of lung abscess demonstrates that it is the old, long standing chronic lung abscess, with thick fibrous walls, which is often not entirely cured by drainage operations. The patients in their series who are well are those who had acute or recent lung abscess. The patients who are not entirely well all had chronic abscesses of from two to seven years' standing which at operation presented thick fibrous walls.

Lung Suppuration and Its Treatment—Meyer presents a review of personal experiences and clinical impressions obtained within the last twelve years in the treatment of forty-nine cases.

Johns Hopkins Hospital Bulletin, Baltimore

January 1923 34, No 383

*Mechanism of Eliminating Phenolsulphonephthalein by Kidney. Proof of Secretion by Convoluted Tubules. E K Marshall Jr and J L Vickers. Baltimore—p 1

*Lipoids of Maternal and Fetal Blood at Conclusion of Labor. J M Slemons and H J Stander. New Haven, Conn.—p 7

*Bactericidal Action of Ultraviolet Light. S Bayne Jones and J S Van der Lingen. Baltimore—p 11

*Wassermann Reaction in Johns Hopkins Hospital. A Keidel and J E Moore. Baltimore—p 16

*Studies on Sugar Tolerance. R H Major. Kansas City Kan.—p 21

*Cause of Certain Acute Symptoms Following Gastro-Enterostomy. R L Haden and T G Orr. Kansas City Kan.—p 26

*Selective Culture Medium for Diphtheria Bacillus. E A Greenspon. Baltimore—p 30

Elimination of Phenolsulphonephthalein by Kidney—The results of the experiments made by Marshall and Vickers indicate definitely that the passage of a colloid free filtrate of plasma through the glomerular capsule is insufficient to account for the amount of phenolsulphonephthalein found in the urine on the basis of the amount of free (filterable) phthalein in the blood. It is obvious that the assumption that all of the plasma could be filtered is incorrect, the increasing concentration and hence osmotic pressure of the proteins would soon bring filtration to an end. Sufficient

allowance has, therefore, been made for the two factors in the calculation which are not accurately known—the volume flow of blood through the kidney and the amount of urine present in the tubules and pelvis of the organ. The authors assert that if their figures for these values are correct, or should the kidney not remove completely the phthalein entering it in the arterial blood, it is also obvious that there is not sufficient total phthalein in the blood at the time of the experiment to account for that which has been eliminated in the urine. The only conclusion which can be drawn is that the substance has been stored in the renal cells at the time of injection and is slowly given out in the urine.

Lipoids of Maternal and Fetal Blood at Conclusion of Labor—Slemons and Stander found that during the latter part of pregnancy, the fat, lecithin and cholesterol of the blood are more abundant than usual. This change, most likely, represents a preliminary step in the preparation for lactation. The mother's blood contains much more of these substances than the fetal blood does. The difference which exists between the two organisms in this respect varies from case to case, and the values prevailing in one seem to be entirely independent of those in the other. The results of blood analyses in human subjects, like the biologic evidence obtained from vital staining experiments in rodents and carnivora, teach that the placenta is impenetrable to fat and lipoids. Fetal fat, then, must be synthesized, probably from glucose, which is freely supplied by the mother in accord with the demands of her offspring. No characteristic change in the blood fat or blood lipoids accompanies the development of eclampsia and allied intoxications of pregnancy.

Bactericidal Action of Ultraviolet Light—Jones and van der Lingen describe methods by which exact determinations may be made of the wave lengths of light which kill bacteria. The sparks of various metals were used as sources of ultraviolet light, except in a few experiments when it was necessary to take advantage of sunlight because of its greater intensity. In most of the work, a quartz spectrograph was used. The bactericidal action of light is confined to the ultraviolet region of the spectrum, beginning at 350 microns and extending with increasing intensity to the shortest wave lengths measurable with a quartz spectrograph, 1856 microns. These limits coincide with the absorption of ultraviolet light by bacteria. The temperature coefficient for the bactericidal action of light was found to be 1.05 over a range of 10 C. An increase in hydrogen-ion concentration of the fluid in which bacteria are suspended during their exposure to ultraviolet light increased the velocity of the bactericidal action. Neither temperature nor the hydrogen-ion concentration rendered bacteria sensitive to the longer wave lengths of light.

Results of Glucose Tolerance Tests—The results of glucose tolerance tests on sixty patients are reported by Major. The diabetic type of sugar curve with glycosuria is constant in diabetes mellitus. The level of the sugar threshold varied greatly, showing a tendency to be higher in older persons. All the cases of acute nephritis studied showed a diabetic type of blood sugar curve usually without glycosuria. No constant type of curve was obtained in thyroid or pituitary disease. Abnormal curves are frequent and indicate a disturbance of carbohydrate metabolism. Increased tolerance to carbohydrates was found in pituitary disease, often with a high sugar threshold. Some of the glycosurias encountered in hyperthyroidism are due to a lowered renal threshold. These observations indicate that as a rule the urine does not show sugar in appreciable amounts until a definite blood sugar level is reached. This level or renal threshold varies somewhat in health but markedly so in disease. Repeated tests on the same individuals show marked variations in this renal threshold. Four persons classed as renal diabetics showed glycosuria with a blood sugar at normal or subnormal levels.

Cause of Certain Acute Symptoms Following Gastro-Enterostomy—Three cases are reported by Haden and Orr showing a high level of nonprotein nitrogen of the blood, low blood chlorides and suppression of chlorid excretion following gastro enterostomy. One patient

alkalosis, two patients had a carbon dioxide combining power at the upper limit of normal when first determined. Two patients also had a very high nitrogen excretion in the urine. All three patients presented clinical symptoms of a severe intoxication. The clinical picture and laboratory findings are believed to be due to an intoxication arising in the upper intestinal tract. The fundamental cause in these cases is probably a duodenal obstruction at the site of the gastroenterostomy which interferes with drainage of the duodenal loop.

Journal of Bone and Joint Surgery, Boston

January, 1923, 5, No 1

- Osteochondritis Dissecans. Report of Cases. A. H. Freiberg. Cincinnati—p 3
- Combined Cistern and Lumbar Puncture. An Aid in Diagnosis of Compression of Spinal Cord. J. B. Ayer. Boston—p 18
- Fracture of Spine with Cord Involvement. W. J. Mixter. Boston—p 21
- *Crush Fractures of Spine. J. W. Wallace. Pittsburgh—p 28
- *End Result in Four Cases of Severe Destructive Injury to Hip. T. S. McBane. M. C. U. S. Army—p 70
- Treatment of Congenital Dislocation of Hip. E. H. Bradford. Boston—p 76
- *Use of Index Finger for Thumb. Some Interesting Points in Hand Surgery. J. Dunlop. Los Angeles—p 99
- Structural Scoliosis Complicated by Paralysis of Lower Limbs, Report of Case. S. Kleinberg. New York—p 104
- *Synovectomy in Chronic Infectious Arthritis. P. P. Swett. Hartford Conn.—p 110
- Congenital Elephantiasis of Toes. H. S. Thatcher and T. Wheeldon. Richmond Va.—p 122
- Conservation of Muscles in Paralytic Deformities of Foot. P. W. Roberts. New York—p 123

Crush Fractures of the Spine—Eighty-two cases of fracture of the spinal column are analyzed by Wallace. A great majority of these cases had been unrecognized and consequently untreated. In six cases the method of injury was not given. In nine cases the history of the injury gave no definite forcible flexion of the spine and the mechanism of the fracture could not be determined. In sixty-seven cases a definite history of forcible flexion of the spine was given. In every case in which the history showed that the patient was caught in a flexed position and had his spine flexed so that the head was forced between the legs, a fracture of one of the lower vertebrae was found. In twenty-three cases there were fractures elsewhere in the body. Fracture of the transverse processes was the most common injury. This occurred on either one or both sides and of the vertebra crushed, sometimes the vertebra above and below. Fracture of the spinous processes was rather rare, having occurred in only three cases. Fracture of the articular processes occurred in one case. The data on the complaints of the patients are not complete, but it appears that in half the cases the patients not only had pain in the back, but also had pain referred to other parts, generally the legs, also to the hips, chest, abdomen, head, etc. A few patients had no pain in the back, but had referred pain. A few had no pain whatever.

Severe Destructive Injury to Hip—The four cases cited by McBane are instructive in that they demonstrate that considerable loss of substance of the upper end of the femur can be followed by a fairly satisfactory functional result. They also demonstrate that this result can occur in spite of prolonged infection. These results show that extensive resections of the upper end of the femur, in adults for severely infected fractures, are justified. They would suggest, also, that it might be justified in severe tuberculous or septic disease in which the mortality is high, recovery slow and tendency to permanent organic damage by amyloid degeneration is great.

Use of Index Finger for Thumb—Dunlop's patient had lost the thumb of his right hand, in addition he had a number of fractures in the carpal area, the wrist was stiff or nearly so in the straight position and the index finger due to the destruction of the base of the metacarpal was somewhat shorter than normal whereby the metacarpophalangeal joint was retracted. The extensor muscle of the index finger was not functioning and the finger was slightly flexed and abducted under the middle finger. The position of the index finger had a great deal to do with the lack of functioning of the middle, ring and little fingers at the metacarpophalan-

geal joint. With the hand in this condition the patient had used it but little and there was practically no motion, except a slight amount in the two interphalangeal joints. The problem, then, as it appeared to Dunlop, was to get the index finger out of the way of the other fingers and use it in place of the thumb. This was done by rotating the metacarpal and the remaining portion of the finger after an osteotomy at the point of fracture and placing the finger in the position of the thumb when taking hold of objects. The operation was successful. The finger made a good thumb.

Synovectomy in Chronic Infectious Arthritis—Fifteen synovectomies have been performed by Swett on eight patients suffering with chronic infectious arthritis. The operation consisted in opening the joint, generally at the site of the greatest thickening and effusion, and then with scissors and forceps dissecting out all of the diseased inner layers of the synovial membrane down to what appeared to be healthy tissue. The joints have all been closed without drainage, and with no fixation. The cases, with one exception, were all of long standing showing marked joint effusion, capsular thickening, and fusiform swellings. Mechanical improvement in the operated joints was promptly manifested by a restoration of painless function in every case, but in two cases a relapse occurred very shortly, and in one of these two cases, reoperations were performed with ultimate, complete recovery. So it may be said that only one case was a failure, and that twelve cases were successful from the point of view of joint mechanics.

Journal of Experimental Medicine, Baltimore

January 1923 37, No 1

- *Reverse Selective Bacteriostatic Action of Acid Fuchsin. J. W. Churchman. New York—p 1
- *Method for Permanent Sterile Drainage of Intra Abdominal Ducts as Applied to Common Bile Duct. P. Rous and P. D. McMaster. New York—p 11
- Intestinal Flora in Mouse Typhoid Infection. L. T. Webster. New York—p 21
- Ox Bile Sensitization in Mouse Typhoid Infection. L. T. Webster. New York—p 33
- *New Method for Mammalian Decerebration. C. F. Schmidt. Philadelphia—p 43
- *Action of Drugs on Respiration. I. Morphine Series. C. F. Schmidt and W. B. Harer. Philadelphia—p 47
- *II. Ether, Chloroform, Chloral, Urethane, Luminal, Magnesium, Caffeine, Strychnin and Atropin. C. F. Schmidt and W. B. Harer. Philadelphia—p 69
- *Functional and Anatomic Study of Excretion of Hemoglobin by Kidney. Y. Fukada and J. Oliver. San Francisco—p 83
- *Mechanism of Vomiting Induced by Antimony and Potassium Tartrate (Tartar Emetic). S. Weiss and R. A. Hatcher. New York—p 97
- Blood Destruction During Exercise. II. Demonstration of Blood Destruction in Animals Exercised After Prolonged Confinement. G. O. Broun. New York—p 113

Selective Bactericidal Power of Acid Fuchsin—Churchman asserts that acid fuchsin possesses a bactericidal power which is selective as between a gram-negative and gram-positive spore-bearing aerobic organism. The selective feature is the reverse of that of gentian violet. This reverse selective activity is also possessed by simpler sulphonated substances and would appear to be dependent in some way on the presence of sulphur trioxide radicals. Selective penetration if at all concerned in the behavior of gentian violet and acid fuchsin toward bacteria, must play a very minor role. In the case of gentian violet the power to kill organisms and the power to prevent their growth run parallel so far as the selective feature is concerned. In the case of acid fuchsin, the bacteriostatic and bactericidal selective features do not run parallel. *Bacillus pyocyaneus*, an organism resistant to gentian violet is quite susceptible to acid fuchsin.

Permanent Sterile Drainage of Common Bile Duct—The success of the method employed by Rous and McMaster lies in the interpolation with special care for asepsis of a long drainage tube between the common duct and the opening in the abdominal wall. The tube must be pliable near the cannula else the latter may be pushed askew through leverage exerted by the viscera, with obstruction as a result, and it must be resistant where it passes the abdominal wall to sustain muscular contraction. To gain these ends, a curved glass tube is employed with on one limb, the soft black rubber tubing that connects with the cannula, and, on the

other, a piece of red duodenal tubing that is to pass through the abdominal wall. The entire U of rubber and glass should be as long as the size of the abdominal cavity will readily permit.

New Method for Mammalian Decerebration—In the method described by Schmidt the brain stem is nearly encircled by a ligature passed about it through suitable openings made in the skull. Its free ends emerge through the roof of the mouth. When the ligature is drawn down tightly against the floor of the skull, the brain stem is severed and the vessels at the base of the brain are compressed.

Action of Morphine Series on Respiration—A method is described by Schmidt and Harer for recording intrathoracic pressure in cats without opening the pleural cavity, active expiratory movements were elicited by inhalation of a constant carbon dioxide air mixture for a given time and a study was made of the action of drugs on inspiration and expiration. Morphine and heroin were found to exert a selective depressant action on the central expiratory mechanism, and the slower rate, with relatively unaltered depth, seemed to be due, at least partly, to the slower rate of emptying the lungs. Codeine had no depressant action on the respiration of decerebrated cats. Larger doses of morphine or heroin had no further depressant effect on rate or depth of breathing after expiration was made passive, unless circulatory depression appeared, and failure of circulation seemed to be the cause of respiratory depression, rather than the reverse relation. In decerebrated animals large doses of morphine and moderate doses of codeine stimulated the spinal cord, and expiration became active, with a faster rate of breathing. The characteristic action of morphine and heroin on the respiration of the cat is apparently limited to a depression of active expiration.

Action of Ether, Chloroform, Etc., on Respiration—The depressant drugs studied by Schmidt and Harer in this series of experiments were found to resemble morphine and heroin in that they depressed expiration more than inspiration, but they acted only in narcotic doses and always depressed inspiration at the same time. Ether caused a sharp expiratory rhythm, persisting until narcosis was very deep, probably a result of irritation of their air passages. Chloroform sometimes caused dyspnea, even in very deep narcosis, probably because of circulatory depression. Chloral hydrate made respiration more rapid, but shallower. Urethane usually made expiration active often with inspiratory pauses, such as may follow vagotomy. Magnesium seemed to produce the most uniform, uncomplicated depression of all the depressants tried. Phenobarbital (luminal) resembled morphine and heroin more closely than any of the general depressants, making expiration passive without depressing inspiration, but it acted only in narcotic doses, unlike morphine and heroin. Caffeine and strychnine, whenever they caused acceleration after morphine, brought back active expiration. Atropine never stimulated, and commonly acted as a synergist to morphine. It is suggested that there is a separate central mechanism for the control of each of the phases of respiration, and that, while each responds to the same chemical stimuli, the threshold is higher for expiration than for inspiration. Evidence is presented to indicate that if expiration remains passive, a marked increase in depth of breathing may slow the rate, and a respiratory mechanism that lacks active expiration may be so inefficient that a carbon dioxide concentration which stimulated when expiration was active may depress when it is passive.

Excretion of Hemoglobin by Kidney—Fukuda and Oliver are of the opinion that the anatomic and functional findings in hemoglobin excretion are best explained by the assumption of a filtration of this substance through the glomerulus and an additional excretion of it by the tubule cells. Absorption of water aids in the concentrating process, and is most marked in the collecting tubules.

Mechanism of Vomiting Induced by Tartar Emetic—The findings obtained by Weiss and Hatcher in their experimental study point to the heart as the seat of reflex vomiting following the intravenous injection of tartar emetic. The intravenous

injection of tartar emetic induces afferent emetic impulses which pass from the heart to the vomiting center mainly by way of the vagus, to a much less extent by way of the sympathetic nerve and the stellate ganglia. The introduction of tartar emetic into the stomach induces afferent emetic impulses which pass upward mainly by way of the vagus, to a much less extent by way of the sympathetic nerve. The introduction of tartar emetic into the duodenum induces afferent emetic impulses which pass upward partly by way of the sympathetic nerve, partly by way of the vagus. It seems probable that the path taken by afferent emetic impulses induced in the gastro-intestinal tract by tartar emetic depends on the innervation of the organ concerned, and not on only selective action of the poison on the afferent nerve.

Journal of Industrial Hygiene, Boston

January 1923 4, No 9

- Consequences of Myopia as Industrial Disease of Eyes N B Harman London England—p 371
Comparative Efficiency of Circular Konimeter and Palmer Water Spray Apparatus for Determination of Dust Content of Air C E A Winslow and R Jordan New Haven Conn—p 375
Role of Syphilis in Industrial Disablement. Analysis of Two Hundred and Ninety One Physical Surveys P Edmunds Baltimore—p 380
Pharmacology of Phenylenediamines P J Hanzlik San Francisco—p 386
Effects of Exposure to Arsenic Trichlorid on Health S Delepine—p 410

Laryngoscope, St Louis

January 1923 33, No 1

- Improvised Artificial Drum as Aid to Hearing Study of Certain Principles Involved P D Kerrison, New York—p 1
Case of Tuborrrhea of Right Ear Impaired Hearing of Left Ear and Polyarthrits Due to Purulent Sinusitis G Wolf New York—p 10
Indications and Contraindications for Submucous Resection of Nasal Septum J N Hoffmann Canton Ohio—p 13
Complete Traumatic Destruction of Vestibular Function with Unusually Slight Coincident Cochlear Involvement S O Fields Norfolk Va—p 16
Correction of External Deformities of Nose by Intranasal Route H B Blackwell New York—p 21
Generalized Clonic Spasms Hemiparesis and Coma Result of Lateral Sinus Thrombosis S Salinger Chicago—p 27
Asthma Hay Fever Nasal Hydrorrhea and Angioneurotic Edema C B Williams Mineral Wells, Texas—p 31
Cysts of Bursa Pharyngea Report of Two Cases F A Figg Rochester Minn—p 37
Management of Certain Nose and Throat Disorders in Singers and Speakers I W Voorhees New York—p 42
Migrating Foreign Body (Pin) in Bronchus G W Fletcher Winnipeg—p 53

Philippine Islands Medical Association Journal, Manila

November-December, 1922 2, No 6

- Rupture of Uterus, Nine Case Reports H Acosta Sison Manila—p 269
Parkinsonian Syndrome in Lethargic Encephalitis Six Cases E Domingo and W Vitug Manila—p 281
Case of Multiple Neurofibromatosis (Von Recklinghausen's Disease) J Rodriguez Culion Palawan—p 289
*Case of Nodular Disseminated Nonulcerative Syphilides P Gutierrez Manila—p 293

Nodular Disseminated Nonulcerative Syphilides—The principal points of interest in Rodriguez case are (1) absence of the characteristic pigmentation from the disease to the present, (2) the inconspicuous of the nodules, some of which were as large as orange but were hardly visible on inspection in contrast to the prominent sessile or pedunculated pendulous growths commonly seen in this disease. There were no marked mental symptoms. The patient was only 17 years of age. His blood Wassermann

South Carolina Medical Association Greenville

January 1923 19, No 1

- Tuberculosis of Kidney M Weinberg Greenville—p 1
Genito-Urinary Routine Suggested J P. Hatcher Columbia—p 2
Humans with Especial Reference to Davidson Atlanta Ga—p 377
Paranasal Sinuses of Children E W Carpenter Greenville—p 380

**Tennessee State Medical Association Journal,
Nashville**

January 1923 15, No 9

- Angina Pectoris J O Manier Nashville—p 389
 Early Diagnosis of Syphilis M Haase and C H Marshall Memphis—p 392
 Results Following Belfield's Operation in 101 Cases of Seminal Vesiculitis J E Hall and J H Litterer Nashville—p 395
 Duty and Responsibility in Face of Abortion Evil J C Ayers Memphis—p 400
 Management of Perineum Following Labor L E Burch Nashville—p 405
 Things Every Physician Should Know About Etiology and Prevention of Mastoiditis A C Lewis Memphis—p 407
 Various Phases of Endocrine Conditions Y W Haley Nashville—p 409
 Plea for Early Treatment of Squint M B Seligstein, Memphis—p 412
 Importance of Early Correction of Cross Eye Deformity B P Pool, Nashville—p 414

Texas State Journal of Medicine, Fort Worth

January, 1923 28 No 9

- Activities of the State Health Department J H Florence, Austin—p 442
 Why We Should Have Whole Time County Health Officers A P Harrison Austin—p 445
 City Health Department W T Davidson Dallas—p 450
 Municipal Health Officer and Industry A H Flickewitz Houston—p 454
 Physician and Public Health M F Bledsoe Port Arthur—p 456
 Plague Suppressive Measures H G White Beaumont—p 458
 Work of Biologic Survey as It Affects Disease Carriers W B Bell Washington D C—p 461
 Proper Field of Public Health Nurse E L Hamrer, Fort Worth—p 466

Wisconsin Medical Journal, Milwaukee

January 1923 21, No 8

- Renal Calculi D N Eisendrath, Chicago—p 349
 Diabetes Mellitus Diagnosis and Treatment B H Schlomovitz L F Jermain and B L Schuster Milwaukee—p 355
 Modification of John Young Brown Operation for Treatment of Chronic Ulcerative Colitis Report of Case E H Mensing and W Thalheimer, Milwaukee—p 362

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Tuberculosis, London

January 1923 17, No 1

- Some Reasons for Failure in Solving Problems Connected with Tuberculosis J MacKenzie—p 12
 Shall We Slaughter Milk Cows Which React to Tuberculin? A Calmette—p 15
 Notification of Tuberculosis R Duffield—p 20
 Education of Tuberculous Patient. H O Blanford—p 24
 *Sanatorium Treatment of Tuberculosis Contrasted with Home Treatment G L Cox—p 27

Sanatorium Treatment of Tuberculosis Contrasted with Home Treatment.—As the result of the analysis of 4 067 histories of adults who commenced treatment during the five years from 1914 to 1918, so far as comparison is possible, Cox is convinced that patients in the early and intermediate stages of pulmonary tuberculosis who have undergone a course of sanatorium treatment even for three or four months, fare appreciably better in health in later years than do those who did not receive such form of treatment. Of 1 047 patients in the early and intermediate stages with negative or absent sputum commencing treatment during the five year period 140 per cent of the sanatorium patients had died at the end of 1921 and 377 per cent of the nonsanatorium patients had died at the end of 1921, and of the 1,263 patients with positive sputum, 61.2 per cent of the sanatorium patients had died at the end of 1921, and 81.3 per cent of the nonsanatorium patients had died at the end of 1921. Cox emphasizes that in both sanatorium and nonsanatorium cases early diagnosis is a very important factor in the successful treatment of pulmonary tuberculosis. In both sanatorium and nonsanatorium cases patients with a negative or absent sputum throughout treatment are much more likely to remain fit for work and less liable to succumb to the disease than

those with tubercle bacilli in the sputum. In the sanatorium cases the mortality from pulmonary tuberculosis is greater among patients with a positive sputum, aged between 15 and 25 years, than in the other age groups.

Calcutta Medical Journal

November 1922 27, No 5

- Studies on Quinin M M Dutt—p 201
 Digitalis J C Aitch—p 232
 Ophthalmic Donations for General Practitioners S K Ganguly—p 237

Glasgow Medical Journal

December 1922 98, No 6

- Study of Diets and Economic Conditions of Laboring Class Families in Glasgow in June, 1922 A M T Tully and F M Urie—p 353
 *Rare Case of Polydactylism of Foot G H Edington and W B Primrose—p 369
 *Review of Service Patients in Mental Hospital D K. Henderson and R D Gillespie—p 375
 *Outbreak of Food Poisoning by Milk Caused by Bacillus Aertrycke W R Wiseman—p 390

January, 1923 17 No 1

- Dr John Borland First Surgeon to Kilmarnock Infirmary His Life and Work J C McVail—p 1
 Cases of Perforation of Bowel and Rupture of Heart. D Fraser—p 19
 Treatment of Early Opacities in Senile Lens with Demonstration of Six Cases W B I Pollock—p 32

Rare Polydactylism of Foot.—The abnormality in the case described by Edington and Primrose consisted of three supernumerary toes occupying the cleft between the hallux and the normal second toe of the left foot. The supernumerary digits were not all in the same plane, one being dorsal, and two being displaced toward the plantar surface of the foot. These last were webbed in half their length, and were capable of active movements, the dorsal digit was not actively mobile, and its nail showed distinct indication of longitudinal division into two. The hallux was not quite so broad as in the normal foot. A roentgenogram showed three supernumerary metatarsal bones, of which two belonged to the plantar toes, and the third, which was imperfect, to the dorsal toe.

Review of "Service" Patients in Mental Hospital.—Henderson and Gillespie analyze 113 "service" cases of the more chronic type. The existing literature is summarized, and various points noted. The confusion and indefiniteness in diagnostic terminology in these papers is deprecated, and a plea is recorded for a uniform system of diagnostic classification. Most of the papers mentioned emphasize the inefficiency of the recruitment mental examination, and the uselessness and positive danger of passing mental defectives and obviously potential psychopaths into the army. Further, it is shown that the proportions of the various disease types among service patients has altered since the war period, and that dementia praecox cases constitute, with mental defectives by far the greater proportion of cases still under care. The etiologic factors are divided into those existing before the war and those associated with service. Of the former, insane heredity, psychopathic predisposition, previous mental illness, constitutional inferiority (i.e., mental or moral deficiency), syphilis, and excessive alcoholism, together accounted for 99 per cent of cases when full data were available. An examination of the symptomatology shows that no new type of mental disturbance has been produced by the war but that certain psychoses (viz., dementia praecox) which in civil life are usually chronically progressive appeared in an acute, recoverable form. It is evident that the majority of the cases under consideration would eventually have entered mental hospitals even had it not been for the war strain.

Food Poisoning Caused by Bacillus Aertrycke.—Wiseman discusses an outbreak of food poisoning due to the consumption of cow's milk and affecting fifty-two persons of ages ranging from 14 months to 83 years. The actual source of the contamination was not discovered. In this outbreak two distinct types of *B. aertrycke* were found—(a) the 'mutton' type, and (b) one closely approximating and probably identical with the Newport type. The conception of interagglutinability of the members of the *B. paratyphosus* B food poisoning group is shown to be susceptible of modification.

Japan Medical World, Tokyo

Oct 15 1922, 2, No 10

- *Immunologic Studies of Intestinal Fluids R Umemura and M Yamanouchi—p 281
Mode of Influence of Carbohydrates on Organisms M Ohtaki K Sukegawa and S Sawaguchi—p 288
Is Phospholipin a Constituent of Hydrolytic Enzymes? S Kai—p 291

Immunologic Studies of Intestinal Fluids—The important points revealed by Umemura and Yamanouchi in their study of the intestinal fluid in search of an explanation of immunologic phenomena are The normal intestinal fluid does not destroy immune bodies The intestinal fluid of an immunized animal contains agglutinin This agglutinin appears in the fluid from the third to the fifth day and reaches the maximum from the tenth to the fourteenth day and then gradually decreases The agglutinin in the intestinal fluid is from one fourth to one sixtieth of that in the circulation The excretion of immune antibodies in the intestinal fluid has no local differences between duodenum and jejunum or ileum The agglutinin in the intestinal fluid is specific The agglutinin in the intestinal fluid has no changes with temperature at 56 C, at 65 C it is reduced from one fifth to one half and at 70 C from one thirty second to one eighth and at from 75 to 80 C it only remains as a trace or disappears entirely The intestinal fluid contains bacteriolysin and performs bacteriolytic action in the test tube The bacteriolytic action takes place in the intestinal canal of an actively immunized animal The bacteriolysin in the intestinal fluid appears from the third to the fourth day after the injection of antigen and it reaches the maximum on about the fourteenth day and then gradually decreases The appearances of the antibodies in the intestinal fluid introduced by passive immunity is the same as active immunity The number of bacteria in the intestine is lowest in the duodenum and increase further down

Journal of Physiology, London

December 1922 57, Nos 1 and 2

- *Metabolism of Salivary Glands III Blood Sugar Metabolism of Submaxillary Gland G V Anrep and R K Cannan—p 1
*Id IV Metabolism of Reducing Substance of Submaxillary Gland G V Anrep—p 7
Studies in Respiration and Circulation in Cat II Oxygen in Venous Blood K Uyeno and Y Doi—p 14
*Circulation After Cessation of Work Calculation of Circulation Rate Experiments According to Nitrous Oxid Method J Lindhard—p 17
Seasonal Variation in Reticulated Corpuscles of Amphibian Blood J M D Scott—p 31
Study of Chlorin Interchange Between Corpuscles and Plasma L Dautrebande and H W Davies—p 36
Calibration of Reversion Spectroscope for Estimation of Carbon Monoxid in Blood H Hartridge—p 47
Visual Acuity and Resolving Power of Eye H Hartridge—p 52
Relation Between External Work Produced and Time Occupied in Single Muscular Contraction in Man H Lupton—p 68
Measurement of Tension of Oxygen and Carbon Dioxid in Blood of Pulmonary Artery in Man A C Redfield A V Bock and J C Meakins—p 76
Concentration of Blood and Effects of Histamin in Suprarenal Insufficiency C H Kellaway and S J Cowell—p 82
*Nature of Sugar in Blood L B Winter and W Smith—p 100

Blood Sugar Metabolism of Salivary Glands—Anrep and Cannan assert that changes in the blood flow through the submaxillary gland do not affect the consumption of sugar from the blood Stimulation of the chorda tympani increases the blood sugar consumption The increase is of the same order as that of the gland secreting under pilocarpin and is broadly proportional to the activity as measured by the rate of secretion The maximal consumption of sugar corresponds with the maximal secretion and does not occur, as does the oxygen consumption, in the postactive period Atropin, in doses sufficient to paralyze the secretion only reduces the effect of the chorda tympani on the sugar consumption Large doses abolish the effect altogether

Metabolism of Reducing Substance of Submaxillary—The resting submaxillary gland yields on acid hydrolysis about 23 per cent of reducing substance calculated as glucose The ratio reducing substance total nitrogen in a resting submaxillary gland is about 0.8 per cent The glands on both sides yield after acid hydrolysis the same absolute amount of reducing substance The saliva secreted under chorda

stimulation becomes gradually poorer in reducing substance The D/N ratio of the saliva also drops with the extent of secretion The ratio reducing substance protein nitrogen is more constant The variations in the latter indicate the presence in saliva of variable amounts of protein which does not give rise to reducing substance The submaxillary gland loses the same amount of reducing substance as is secreted in the saliva There is no evidence of a process of reconstruction of mucin during the secretion under chorda stimulation as judged by the reduction after acid hydrolysis

Circulation After Work—The results of experiments dealing with the oxygen consumption per minute the oxygen absorption per liter of blood and the pulse rate within the first twenty minutes after cessation of muscular work in two male subjects are given by Lindhard The minute volume of the heart as calculated from the experimental data shows that the circulation rate decreases rapidly during the first two minutes and then more slowly following a rather complicated curve

Nature of Sugar in Blood—A method is described by Winter and Smith for obtaining the sugar of blood in a concentrated solution free from proteins By means of this it is shown that the sugar in normal blood of man, and of the ox, sheep, cat and rabbit, is an unstable form of glucose, with an initial low rotatory power It is suggested that the sugar is gamma (γ) glucose Glucose and fructose, taken in large quantities by mouth, cannot be detected as such in the blood, their conversion into normal blood sugar being very rapid Nervous influences alter the nature and quantity of the blood sugar The blood sugar of persons suffering from severe diabetes mellitus is of an abnormal nature It appears to be the α , β form of glucose An enzyme is postulated whereby the α , β equilibrium form of glucose is converted into γ glucose This enzyme is absent from the blood The absence or inactivation of this enzyme is suggested as the cause of diabetes

Lancet, London

Jan 13 1923 1, No 5185

- *Pyloric Stenosis of Infants L G Parsons and S G Barling—p 59
*Addison's (Pernicious) Anemia H Gilford—p 64
*Secondary Infections Complicating Pulmonary Tuberculosis Among Sanatorium Patients R C Wingfield—p 66
Sulpharsenol in Treatment of Syphilis and Some Complications of Gonorrhea F C Doble—p 70
*Nondiartheic Type of Celiac Disease Form of Chronic Fat Indigestion in Children R Miller and H Perkins—p 72
*Injection of Alcohol in Treatment of Prolapse of Rectum in Infancy and Childhood L Findlay and F B D Galbraith—p 76
Skin Eruption Due to a Mold (*Cercospora Vexans*) C Russ—p 77
Treatment of Whooping Cough by Lactic Acid Bacillus Preparation F Parry—p 78
Chronic Disease of Antrum T B Jobson—p 78
Hemilaryngectomy for Carcinoma F Muecke—p 78

Results of Medical and Surgical Treatment of Pyloric Stenosis—The paper is based on an analysis of ninety-four cases, of which thirty-six were treated by medical means, eight by gastro-enterostomy after failure of medical measures, and fifty by Rammstedt's operation The results of medical treatment alone were very unsatisfactory Relief of the obstruction by Rammstedt's operation preceded and followed by a careful medical regimen offered the best means of reducing the high mortality of the disease Rammstedt's operation, in the opinion of Parsons and Barling allows the redundant mucous membrane to bulge and for a time abolishes the sphincteric activity of the pylorus Given early diagnosis and this treatment the authors believe the mortality can be reduced to 20 per cent Functional test meal examination of the stomach shows high rennin high free acidity, and high total acidity in the resting juice, delayed emptying and absence of duodenal regurgitation Chemical analysis of the stools negatives the suggestion that these patients are suffering from pancreatic insufficiency This and other evidence the authors assert is opposed to the hyperadrenalism theory of the cause of hypertrophy put forward by Gray, Pirie and Reynolds

Addison's Pernicious Anemia—The place which Addison's anemia should hold among diseases, Gilford says, is with

the errors of development Too early senescence of the red blood organs results in pernicious or Addison's anemia

Secondary Infections of Pulmonary Tuberculosis—While he does not advocate the administration of autogenous vaccines in every case of pulmonary tuberculosis in which the character and bacteriology of the sputum lead one to suspect a secondary infection, Wingfield tries to show that there are certain types of cases in which, even under sanatorium conditions, secondary infection of clinical importance can be recognized easily and will respond promptly to autogenous vaccine treatment

Nondiarrheic Type of Celiac Disease—A group of children who failed to thrive owing to their inability to absorb fat properly is reported by Miller and Perkins, and the principles of treatment for the condition are discussed In spite of the absence of diarrhea (in the popular sense of the word), and in spite of the absence of the typical pale, unformed, and offensive celiac stool, these are, nevertheless, cases of celiac disease in a mild form It is suggested that the group may be conveniently termed the "nondiarrheic or dry form of celiac disease" A stool may contain a large excess of fat (even over 50 per cent) and yet be formed and colored if the fat in it is chiefly in the form of soaps, whereas, when chiefly in the form of fatty acids, the excess of fat causes the stool to be pale, unformed, and offensive The soapy stool is found in the nondiarrheic group and the fatty-acid stool in the classical diarrheic form of celiac disease Recognition of the nondiarrheic group suggests that the diarrheic cases may show considerable naked eye improvement in the stools without there being a return to the normal power of fat absorption—in other words, that during the quiescent and convalescent stages in celiac disease the essential failure in fat absorption will still be recognizable by analysis of the stools Examples are quoted to prove this point Its recognition also affords strong evidence against the view that celiac disease is due to an enteritis or that it has any essential connection with intestinal disease A consideration of the two sorts of stool in celiac disease—the pale fatty acid and the colored soapy stools—leads to the view that the pallor of the classical celiac stool is due not to an absence of bile pigment, but rather to a masking of the pigment by the excess of fat present as fatty acid crystals

Alcohol Treatment in Prolapse of Rectum—With the finger in the rectum, to act as a guide, Findlay and Galbraith inject 15 cc of absolute alcohol on each side into the perirectal tissue at a depth of from 2 to 2½ inches An ordinary exploring syringe is employed, the needle being inserted on each side about ¼ inch from the anal margin The needle punctures are sealed with collodion, a pad is placed in the perineum and kept in position by strapping the buttocks firmly together Instructions are given that the child must move the bowels only while in the recumbent position, the fecal matter escaping by the side of the dressing The pad and strapping are reapplied daily for a week Forty-one children have been so treated by the authors In two cases the operation had to be repeated once, and in one case twice, but in all the other examples only one treatment was necessary to obtain a cure

Medical Journal of Australia, Sydney

Dec 23 1922 2, No. 26

The Practice of Medicine. J Gordon—p 725
Peptic Ulcer. G P Dixon—p 726
Use of Antigonoococcal Serum in Treatment of Complications of Gonorrhea—p 731
Case of Pernicious Anemia with Early Spinal Symptoms. C B Blackburn With Pathological Report. O Latham—p 735

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Suggested Amendments of Public Health Legislation in Queensland. A G Butler E S Meyers J A Dubig and S F McDonald Queensland—p 757
Case of Hemorrhage in Newly Born. W R Groves—p 762

Medical Journal of South Africa, Johannesburg

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Senility. E R Snyman—p 11
Analysis of 466 Post Mortem Examinations Held at Government Mortuary, Johannesburg. J J Levin—p 119

Bulletins de la Société Médicale des Hôpitaux, Paris

Dec 22 1922 46, No 37

Insufficiency from Fenestrated Pulmonary Valve. E Barie—p 1735
*Auto-Injections in Post Encephalitis Syndromes. A Souques—p 1736
*Paroxysmal Hemoglobinuria from Chilling. Roch and A Liengme—p 1737
*Cerebrospinal Meningitis in Infants. Chevrel—p 1742
*Artificial Pneumothorax with Adhesions. Ameuille and Jullien—p 1747
*Hirsutism in a Boy. E Apert et al—p 1750
Non Familial Myoclonic Epilepsy. J A Sicard and J Lermoyez—p 1753
*Tyrosin Test for Tuberculosis. A Pissavy and R Monceaux—p 1756
Bismuth Medication in Specific Aortitis. Laubry and Bordet—p 1760
*Contamination of Offspring by Hereditary Syphilitic. M Pinard—p 1769

Intravenous Injections of Cerebrospinal Fluid in Parkinsonian Postencephalitic Syndromes—Souques had no results with the treatment of parkinsonian postencephalitic syndromes with intravenous autoinjections of cerebrospinal fluid as recommended by Piticariu Sicard added similar negative experiences in the debate

Paroxysmal Hemoglobinuria Provoked by Cold—Roch and Liengme describe a case of paroxysmal hemoglobinuria with attacks provoked by cold and by an intravenous injection of a very small amount of casein (5 cg) Although the Donath-Landsteiner test was positive, the patient had a negative Wassermann test, and hemoglobin was not found in the serum in any of his attacks The attacks appeared later than in typical cases, and lasted much longer than usual (ten to fifteen days)

Cerebrospinal Meningitis Due to Pseudomeningococcus—Chevrel observed in infants two cases of cerebrospinal meningitis due to *Diplococcus crassus* and two to *Diplococcus sicus* These affections are very severe and their diagnosis can be made only by cultivation Most of these pseudomeningococci are gram-negative and some are agglutinated by the anti-meningococcus B serum

Artificial Pneumothorax with Adhesion of the Layers of the Pleura—Ameuille and Jullien report the case of a woman in whom all the clinical and roentgenologic symptoms suggested adhesion of the layers of the pleura (fifteen year old pulmonary lesions, condensation of the left lung, and retraction of the base of the thorax) Yet pneumothorax was possible, and materially improved the patient's condition

Hirsutism in a Twelve Year Old Boy—Apert, Stevenin and Broca publish a case of extreme hirsutism in a boy, aged 12 The intelligence and behavior were those of an adult His pulse, respiratory rhythm and blood pressure corresponded also to those of an adult The most interesting finding was in basal metabolism, which was too low for a child of his age and proportions, but perfectly normal for adults Although he was fat and small, pituitary treatment was without good results and caused a further increase in weight The examination of his basal metabolism led to the administration of thyroid, which seemed to work better

Tyrosin Reaction in Diagnosis of Tuberculosis—Pissavy and Monceaux report further good results in fifty-two experiments with the reaction for tyrosin in tuberculous sputum The reaction was only twice negative in patients with tubercle bacilli in the sputum On the other hand, one case gave the reaction almost six months before the appearance of bacilli The reagent which they use deteriorates very easily They give details of the technic

Contamination of Wife and Child by Hereditary Syphilitic—Pinard reports a case of probable hereditary syphilis The wife and child, although without actual symptoms, have also a positive Wassermann

Médecine, Paris

December 1922, 4, No 3

Hygiene and Infectious Diseases in 1922. L Tanon—p 165
*Feeding in Acute Diseases. M Labbe—p 176
*Treatment of Infectious Diseases. H Dufour—p 181
*Persistence of Malaria Parasites. J Rieux—p 187
Hygiene in Infectious Diseases. G Reynaud—p 192
*Internal Mycoses. P Ser—p 197
*Masked Forms of Intestinal Amebiasis. F Moutier—p 199
*Typhoid Fever. P Hebert and M Bloch—p 205
*Primary Symptoms of Measles and Scarlet Fever. Piedelire—p 210
Arsphenamin Treatment of Pulmonary Gangrene. M Perrin—p 215

Treatment of Epidemic Encephalitis J Jumentie—p 221
Complement Fixation in Tuberculosis J Paraf—p 224
Intravenous Injections of Sodium Silicylate in Acute Articular Rheumatism R Lutembacher—p 228
Typhoid Fever and Autovaccines R Dubarry—p 229
Bacilli in Diphtheric Membranes A Baranger—p 233
Treatment of Malaria P Lassabliere—p 235

Nutrition in Acute Diseases—Labbe recommends a diet rich in albumin to restore the proteins lost by the increased metabolism. The elimination of toxic substances should be aided by large amounts of fluid.

Treatment of Infectious Diseases by Shock, Fixation Abscess and Vaccine Therapy—Dufour finds these methods useless and dangerous in the first stage of infectious diseases. If the disease continues and is too severe or too protracted such treatment is justified, as well as in the later stages.

Evolution of Malaria—Rieux believes that disappearance of the parasite from the blood of patients, which is usual after a year, signifies recovery. The attacks of fever, which may occur later are rather due to other diseases or sequelae of malaria, and not to its manifestations.

Internal Mycoses—See draws the attention to internal mycoses, especially aspergillosis and oidiomycosis, which may clinically resemble tuberculosis of lungs. These affections can be cured with iodids.

Hidden Forms of Intestinal Amebiasis—Moutier advises systematic examination of the stools for dysenteric amebas. Any enteritis, colitis or proctitis may be due to them.

Typhoid Fever—Hebert and Bloch's statistics show a very good influence of vaccination on morbidity and mortality.

Diagnostic Value of Primary Signs of Measles and Scarlet Fever—Piedelievre considers Koplik's spots as a pathognomonic sign of measles. Careful examination may reveal them more than a week before the general exanthem. In the diagnosis of scarlet fever, a low blood pressure and a distinct enlargement of the spleen may aid. Schultz and Charlton's extinction sign is constant, but almost useless for the early diagnosis.

Complement Fixation in Tuberculosis—Paraf points out the specificity of the reaction. It is not positive in all cases of active tuberculosis, and this applies especially to the early stages and to tuberculosis of organs other than the lungs.

Paris Médical

Dec 23 1922 12 No 51 Pasteur Number

Republication of Pasteur's Four Revolutionary Articles 1861 1884—pp 561 584

Dec 30 1922 12 No 52

*Forms of Uric Acid in the Blood M P Weil and Guillaumin—p 585

Functional Heart Murmurs in Children G Blechmann—p 588

*Recent Research on Causes of Rachitis E Pichon—p 595

Various Forms of Uric Acid in the Blood—Weil and Guillaumin distinguish between the 'total uric acid' of the blood and the free uric acid with its salts. The usual methods give only the value of the latter. The other part of the 'total uric acid' consists of more or less complete remnants of nucleotids. Some of them give some reactions of uric acid (combined uric acid). In others, hydrolysis of the plasma after removal of albumin has to precede the reaction (uricogenous compounds). Their determination is still in the experimental stage. The uric acid of the plasma belongs almost exclusively to the free group. The combined uric acid is practically limited to the corpuscles, which contain also some free uric acid. A method of determination is given.

Recent American and English Research on Causes of Rachitis—Pichon reviews some new American and English researches on rachitis.

Progres Medical, Paris

Jan 6 1923 38, No 1

*Prophylaxis of Inherited Syphilis Vignes and Galliot—p 1

Mineral Water Treatment of Genito-Urinary Affections Legueu—p 3

*Relation of Heart Disease to Pregnancy P Hermet—p 4

Prophylaxis of Inherited Syphilis in Paris Lying-in-Hospitals—Vignes and Galliot report good results in prophylaxis

in maternity hospitals in Paris, and describe the treatment given to adults and the new-born.

Heart Disease and Pregnancy—Hermet reviews the opinions of American authors on the subject of heart disease and pregnancy (Pardee, Lambert Bishop, Neuhoof).

Schweizerische medizinische Wochenschrift, Basel

Dec 28 1922 52, No 49 50

*Leukorrhea W Bigler—p. 1193

*Functional Treatment of Dysmenorrhea F Ludwig—p 1198

Neuroma-Like Formations in Obliterated Appendices Schweizer—p 1202

Traumatic Rupture of Diaphragm in Congenital Diaphragmatic Hernia G G Moppert—p 1205

Psychology of Treatment of Neurosis A v Muralt—p 1207

Paroxysmal Pseudo-hemoglobinuria T and J Stephani—p 1209

Action of Bile Acids on Heart A Tappolet—p 1210

*Increasing the Coagulability of Blood P F Nigst—p 1211 Conc n

*Volume of Blood in Pregnancy E Gueissaz and F Wanner—p 1216

Etiology and Treatment of Leukorrhea—Bigler limits his paper to the nonspecific fluor. It originates only in the vagina or cervix, never in the body of the uterus. Although admitting that a normal secretion usually corresponds to a low bacterial content, he finds that there are no direct relations with high bacterial contents. One has to assume an endogenous factor—a readiness to inflammation. A non-specific secretion of this kind is very often only the external manifestation of an internal change endocrines, especially the ovary. Acute and chronic general infections, diseases of blood and metabolism, and constitutional anomalies, like infantilism and status lymphaticus or hypoplasticus, are frequent causes. Bactericidal powers of the vaginal epithelium and of the blood are important protecting factors against leukorrhea. Evidences of vagotonia are common in the condition, and irritability of the vagus nerve may be the cause of a hypersecretion, especially from the cervix.

Functional Treatment of Dysmenorrhea—Ludwig surveys the theories, and accepts dysmenorrhea as a disturbance of the tonus of the uterus. Substances paralyzing the tonus have a favorable influence.

Increasing the Coagulability of the Blood—This is the last of a series of articles. Nigst points out that the bleeding is not a direct function of the coagulability of blood. Measures which lead to an increase in the blood coagulability in vitro like application of roentgen rays on the spleen, have no practical value for surgical hemostasis. Local application of hemostatics may be useful, but only the classic surgical methods are reliable. An extensive survey of the literature is given.

The Total Volume of Blood in Pregnant Women—Gueissaz and Wanner computed the volume of blood in ten nonpregnant and twelve pregnant women and seven women after delivery. They used a combination of de Crinis and Low's methods (injections of glucose solution and refractometry of the serum). They found an increase in the blood volume of 15 per cent in the pregnant.

Dec 30 1922 52, No 51 52

*Wildbolz Reaction R Kipfer—p 1241

*Transvestitism R Bing and S Schonberg—p 1254

*Sugar Metabolism A Gigon—p 1258

Syphilis-Like Affection of the Nail Due to Bacillus Fusiformis M Tieche—p 1259

*Parathyreoprival Tetany M Greppin—p 1260

*Sweating from Standpoint of Loss of Energy M E Bircher—p 1263

*Agglutination for Typhoid in Cholelithiasis C W Jungeblut—p 1269

Reaction and Amount of Urine A Stachelin—p 1271

Wildbolz' Urine Reaction—Kipfer gives details of the technic, a report on 200 cases, and a survey of the literature on 2,300 cases. He considers the reaction a valuable adjunct in the diagnosis of tuberculosis. He points out that negative clinical findings are not an absolute scientific proof that there is no tuberculosis.

Transvestitism—Bing and Schönberg publish four cases of pronounced transvestitism—insistence on dressing in the clothes of the opposite sex. One of the men used bovisch clothes.

Sugar Metabolism—Gigon does not find that the free blood sugar has a direct effect on the metabolism. It has perhaps some influence on the metabolism.

He supposes that the greatest part of the circulating sugar is bound to nitrogenous compounds

Case of Parathyreoprival Tetany, with Formation of Cataract, and Transplantation of Parathyroids—Greppin discusses especially the relation of the cataract to the tetany, and gives the literature on the subject, including treatment by transplantation of parathyroids

Sweating from Standpoint of Loss of Energy—Bircher produced sweating in twenty persons by heat and light. The oxygen consumption increased 13 per cent over the basal rate, and the temperature of the body about 1 degree C. The increased metabolism lasted longer than the sweating

Agglutination for Typhoid in Cholelithiasis—Jungeblut examined seventeen patients with cholelithiasis. Agglutination of typhoid bacilli was positive only in two cases and of dysentery bacilli in two, together with agglutination of the colon bacillus

Annali Italiani di Chirurgia, Naples

Dec 20 1922, 1, No 10 12

- *Sarcoma of Kidney and Vagina in Infant G Roello—p 743
- Malarial Splenomegaly in Sardinia F Putzu—p 767
- *Perforated Gastric Ulcer T Niosi—p 866
- War Wounds of Skull and Brain M Sbrozzi—p 904 Cont'd
- Transactions of Italian Surgical Congress—pp 926 992

Sarcomas in an Infant—A pedunculated sarcoma in the vagina grew rapidly again after repeated resection, and necropsy at the age of 8 months showed a sarcomatous tumor in both kidneys. Roello says that this is the seventeenth case on record of primary bilateral blastomas in children

Perforated Gastric Ulcer—Only two of the patients were women in Niosi's twelve cases. The age ranged from 18 to 50, and the onset of symptoms was sudden and stormy. In two of the cases the perforation was the first indication of the presence of an ulcer. The sudden intense pain persisted for three or five days before it became relieved. In one case the pain subsided completely, nothing but moderate tenderness in the epigastrium remaining of the severe symptoms that had suggested perforation. There was no history of previous stomach disturbances, and the man had leaped across a ditch just before his sudden pain. Niosi operated with considerable hesitation until the perforation came into view. In another case the man remained at work, and ate beans for supper. The interval in his case was thirty hours, and necropsy two days after the operation revealed a second perforation

Biochimica e Terapia Sperimentale, Milan

Dec 31 1922 9, No 12

- Color of Blood After Carbon Monoxide G Benassi—p 357
- Clinical Tests for Urobilin E Tarantola—p 364

Color of Blood After Carbon Monoxide—Benassi admits that although the light red color of blood stains in persons dead from carbon monoxide poisoning is important, yet the absence of the color does not disprove at all the possibility of a great part of the hemoglobin being bound with carbon monoxide

Polichinco, Rome

Jan 1 1923 30 No 1

- *Inversion in Epidemic Encephalitis G Sabatini—p 2
- Two Cases of Pernicious Anemia F Grego—p 7
- *Oral Affections in Pregnancy G B Poletti—p 13

Inversion Phenomena in Encephalitis—Sabatini reports two cases of inversion of the daily cycle of activity after encephalitis. One of the patients with a parkinsonian syndrome was perfectly dull during the day, but was able to do fine work in the late evening. He points out that the insomnia of some encephalitic children with agitation is a similar phenomenon. Interesting examples of differences in the writing of the patients in the forenoon and at night are given. The morning samples show many pathologic changes. One subject needed three times the time to copy that was sufficient at night

Oral Affections in Pregnancy—Poletti discusses the affection of the mouth in pregnancy and puerperium. Pregnancy probably causes or perhaps aggravates different affections of

the mouth (gingivitis, caries of teeth). These disturbances seem to depend on alterations of the internal secretion (ovary, thyroid, parathyroid, posterior pituitary). Organotherapy may give good results

Jan 1, 1923 30, Medical Section No 1

- *Ulcerous Typhoid Aortitis E Marchiafava and A Nazari—p 1
- *Weisz Reaction in Typhoid G Salmoni—p 8
- *Prophylaxis of Pertussis with Vaccines L Auricchio—p 25
- *Gases of the Blood T de Sanctis Monaldi—p 33

Ulcerous Typhoid Aortitis—Marchiafava and Nazari give a clinical and pathologic account of the rare affection which caused the death of Take Jonesco. The famous Roumanian politician became ill nine days after eating two oysters in Naples. The typhoid fever started rather mildly, but on the fifty-second day the temperature increased. At the same time the patient suffered pains in the anterior inferior part of the abdomen, more to the left side. They increased during movements and defecation. Later the pain irradiated to the pubic and iliac regions, and remained till the end, which occurred suddenly, with symptoms suggesting internal hemorrhage, on the eighty-ninth day. A blood culture taken sixteen days before death was negative. The necropsy revealed arteriosclerosis of the aorta with a typhoid ulcer about 1 cm proximal to the iliac vessels. The defect led into an aneurysm of the size of a small hen's egg, perforation of which had caused a retroperitoneal hematoma. This explained the clinical findings of an inferior abdominal angina

Weisz' Reaction in Typhoid—Salmoni used Weisz' reaction with permanganate in 1354 different cases, 360 of which belonged to the typhoid group, 300 were tuberculous. He found it very constant in typhoid fever. It appears earlier than agglutinins, is more simple and constant than the diazo-reaction, besides being independent of the drugs taken by the patient. It is negative in the first two stages of tuberculosis, but practically constant in the third. The reaction is due to some substances which are present only in pathologic states. It is to be considered positive only if the color is really a golden or canary yellow and if it persists, because a similar color caused by the presence of urobilin disappears in a few minutes

Vaccine Prophylaxis of Whooping Cough—Auricchio used a vaccine prepared from four strains of the Bordet-Gengou bacillus in forty cases which were exposed to infection in the family. Thirty-eight of these remained healthy, and only two who were vaccinated during the incubation phase showed slight symptoms of the disease. He made within six days three injections of 2 and 3 cc of a vaccine containing 2 billions of germs per 1 cc. He examined in ten cases the progress of immunization by repeated agglutination, complement fixation (which he calls the Wassermann reaction), and opsonin tests. All of them showed the efficacy of the treatment

Gases of the Blood—De Sanctis-Monaldi reviews the gases of the blood, especially in relation to acidosis

Tumori, Rome

Dec 25 1922 9, No 3

- Blood Vessels in Experimental Tumors S Dentici—p 249
- *Chronic Inflammation and Experimental Tumors G d'Agata—p 263
- Cancer in Wolfian Region E Gioja—p 278
- *Dercum's Disease and Multiple Lipomatosis G Goglia—p 318
- *Fibrosarcoma of Pharynx G Ferreri—p 333
- *Fibrosarcoma of the Tongue R Brancati—p 356

Chronic Inflammation and Experimental Tumors—D'Agata inoculated mice with cancer and with the sporothrix, together or separately. The two processes, the cancer and the chronic inflammation developed separately even in the same organ. When the cancer was not inoculated until there was an intense peritoneal reaction to the inoculated inflammation, the cancer did not take

Adiposis Dolorosa and Multiple Nodular Lipomatosis—Goglia's data confirm the anatomic similarity between the two affections while reaffirming the absolutely different clinical course and prognosis. The asthenia in Dercum's disease is physical, psychic and cardiovascular. There may even be hallucinations and tachycardia. The onset may be almost like an explosion. It resembles the attack of gout to such

an extent as to suggest that the fat is deposited in the subcutaneous tissue to form adipose tophi in the same way that the urates are deposited in cartilage to form gouty tophi. In the five cases described, one was typical Dercum's disease, three were ordinary multiple lipomatosis, and the fifth case was evidently a transitional form between the two. His review shows that Dercum's disease mainly affects women while ordinary lipomatosis affects men. Long survival is rare with *adiposis dolorosa*.

Lymphosarcoma of Pharynx.—Deep roentgen-ray treatment was applied in Ferreri's three cases, and the two men were apparently entirely cured. They have had no return of disturbance during the months since. One woman died. The sarcoma was in a tonsil in this case. Swelling of glands in the neck was the first symptom, and the tumor in the tonsil developed rapidly in less than three months from the first symptoms. The lymphosarcoma retrogressed also in this case after the cross-fire exposure to one third of an erythema dose. By the third day the aspect was almost normal, but the patient died from acute marasmus. The symptoms indicated intense intoxication. Necropsy revealed metastasis in the spleen although to the eye it seemed normal.

Fibrosarcoma of the Tongue.—The tumor had been noticed for six months. It occupied the tip of the tongue in a boy aged 17. The whole tip of the tongue was resected under local anesthesia. Brancati advocates resection of the entire tongue in case of rapidly growing sarcoma.

Brazil-Medico, Rio de Janeiro

Dec 9 1922 2, No 49

- *Mycosis Associated with Leishmaniasis F Terra et al.—p 363
- Necropsy Findings in Case of Syringomyelia M Couto Filho—p 368
- Uranotomia Mosquitoes A Neiva and C Pinto—p 374

Associated Leishmaniasis and Mycosis.—One leg from hip to toes was scattered thickly with ulcerated nodules, which proved to be due to two distinct processes, cutaneous leishmaniasis and a dermatitis from which the acrotheca was cultivated. The term *chromoblastomycosis* is suggested as a descriptive title.

Dec 16 1922 2, No 50

- *Prophylaxis of Syphilis in Infants A Pedro—p 381
- *Suppurating Cholecystitis R. da Silva—p 383
- *Spontaneous Cure of Cataract J Santa Cecilia—p 385
- Flagellate Parasites of Birds A Marques da Cunha and J Muniz—p 386
- Treatment of Fetid Bronchitis G do Couto e Silva—p 388

To Ward Off Syphilis in the Offspring.—Pedro emphasizes the necessity for mercurial treatment of all pregnant syphilitic women. He reiterates that systematic treatment all through the pregnancy is imperative, and that it is harmless, whatever the woman's condition. He injects the mercury in a muscle or by the vein, regardless of the Wassermann reaction. The results in years of this treatment have confirmed that it protects the fetus against spirochetes, and allows its normal development and growth after birth. He reports a number of instances in which healthy children were born under systematic mercurial treatment while the same women bore deformed children in previous or subsequent pregnancies without the mercury. Treatment of the father has no influence on the offspring.

Treatment of Acute Purulent Cholecystitis.—The young woman seemed to be moribund from the intense peritoneal reaction to acute suppurating gallbladder disease. She was weak from a childbirth a month before followed by influenza. Ribeiro da Silva merely broke up adhesions and aspirated about 40 gm of the purulent contents of the gallbladder by capillary puncture which revealed streptococci. Recovery was prompt and complete. Cholecystectomy later proved unnecessary.

Spontaneous Cure of Cataract.—The man had been blind from bilateral cataract for twelve years when sudden improvement was observed in the right eye. For seven years since to date, he has been able to distinguish movements of the hand at 1 meter. The papilla shows glaucomatous excavation. The milky cataract must have ruptured the capsule and been absorbed. Santa Cecilia states that there are about eighty cases on record of reabsorption of an overripe cataract.

Dec 23 1922 2, No 51

- *Etiology of Beriberi C Fraga—p 395
- *Gummatous Lymphomas O Clark—p 400
- New Species of Blood Sucking Insect A Neiva and C Pinto—p 402
- *The Bone Marrow in Immunization C Magarinos Torres—p 403

Etiology of Beriberi.—Fraga presents evidence to sustain his conviction that beriberi—in Brazil, at least—is an infectious disease and not a deficiency disease. A one-sided or oversterilized diet may afford a predisposition, but this alone will not induce beriberi. He describes the clinical picture in three cases under close supervision from the very first symptoms. Two in this group were medical students. The onset was always that of an acute infectious disease. The polyneuritis developed about the fifth day. The acute infectious onset is generally ascribed to influenza or something else and the connection with the polyneuritis escapes notice. He cites two groups of nine convicts each in the penitentiary at Bahia who volunteered for experiments on promise of release. They were fed on hulled or sterilized rice or other deficient diet for a month or six weeks, but none developed polyneuritis. He adds that perhaps the strongest argument in favor of the infectious origin of beriberi is the success of treatment with arsenicals. At the Bahia insane asylum Barreto Prager has had most encouraging results with neo-arsphenamin. In a recent epidemic of beriberi, cure under neo-arsphenamin was comparatively rapid. If a deficiency diet were alone responsible, how could this benefit from arsenical treatment be explained?

Gummatous Lymphomas.—Clark urges tentative treatment for syphilis before accepting the diagnosis of lymphosarcoma. In two cases described the lymphomas melted rapidly under specific treatment. In one case futile operations had already been performed on the huge lymphomas in both inguinal regions.

The Bone Marrow in the Course of the Immunization Process.—During the last two years Magarinos Torres found decided changes in the bone marrow of rabbits which were being utilized for production of agglutinins. The changes in the bone marrow seemed to parallel the curve of agglutinin production. The action of the antigen, the leukocytosis, and the production of antibodies all make demands on the bone marrow.

Medicina Contemporanea, Lisbon

Aug 20 1922 40 No 34

- *Bilharziasis in Portugal C. Franca—p 265 Con'c'n

Bilharziasis in Portugal.—Franca relates that not until 1921 were any autochthonous cases of bilharziasis known in Portugal but in that year and since a number of cases were found. The majority were in a single focus, the bay of Atalaya in which the women of the neighborhood were accustomed to wash clothing, standing in the water. A mission from the Lisbon Bacteriologic Institute found that a thermal spring in this bay kept the water warmer than elsewhere, averaging 25.5 C. This explained the survival of the bilharzia in molluscs, and rendered improbable the spread of the focus. A number of works have been published on this endemic bilharziasis in the last two years describing research on the intermediate hosts as well as the clinical cases, and the action of antimony tartrate. Besides Franca, Bettencourt, Machado d'Almeida and Pereira da Silva have been investigating indigenous bilharziasis. In twenty-three cases complement fixation tests were positive only in six. Treatment with antimony tartrate proved effectual, but the correct dosage, Franca says, is still a question.

Revista Medica del Rosario, Argentina

November-December 1922 12 No 6

- *Blocking the Splanchnic Nerves P L Mirizzi—p 347
- Anguillula Stercoralis in Stools of Young Man R Barratt—p 381
- *Spontaneous Meningeal Hemorrhage T Fracassi—p 392

Splanchnic Regional Anesthesia.—Mirizzi applied on seven teen cadavers the various techniques that have been proposed for blocking the splanchnic nerves. He injected a solution of methylene blue. With the Kappir technique the diffusion of the anesthetic showed that the analgesia would probably have been complete in 80 per cent. of the subjects. W. Brauns, technique, the proportion was still other, 100. Th.

details of thirty-two clinical cases in which the Kappis method was used on the right side are tabulated, and compared with what others have published, citing over 411 cases. In Mirizzi's cases the analgesia was satisfactory in 88.46 per cent. The duration of the analgesia was two and a half hours in two cases tested. The cases in which the anesthetic had to be supplemented by other means were in nervous or obese patients, or the site of the lesion had not been accurately diagnosed beforehand.

Spontaneous Meningeal Hemorrhage—Fracassi reports eight cases in adults, encountered in two years. The diagnosis is almost impossible without lumbar puncture. In two of his cases treatment for epidemic meningitis had been given. The sudden onset in the midst of apparent health is the most striking feature of this "meningeal epistaxis" or "meningeal hemoptysis," as it has been called. Sudden convulsions or coma open the clinical picture, but there is no frank hemiplegia, and if the hemorrhage stops, the symptoms gradually subside in a week or two, or the hemorrhage may return. Treatment is that for cerebral hemorrhage in general, supplemented by injections of normal horse serum to promote coagulation. Lumbar puncture should not be repeated, as a rule, because reducing the pressure may favor recurrence of the hemorrhage. One patient has survived three attacks at long intervals, others died at the first or second attack. The mortality was 25 per cent, the age ranged from 33 to 56, except one girl of 19. Complete coma was the first symptom in this girl, with bilateral Babinski but no other symptoms until the second day of the coma when there was slight stiffness of the neck. The coma continued with temperature of 37.5 C for twenty days, with slow final recovery. The other patients were all men.

Revista Médica del Uruguay, Montevideo

November 1922, 25, No 11

- Aid for Unmarried Mothers A. Turenne—p 785
- *Hereditary Ataxia A. Isola and H. Artucio—p 795
- *Pernicious Anemia in Purpura C. Bordonio Posse and R. Rinaldi Guerra—p 798
- Dysentery from Lambliasis Justo F. González—p 802
- Lambliasis in a Boy Camilo Payssé—p 806
- *Leprosy in Uruguay Jose Brito Foresti—p 808
- Tetanus Fatal in One Day E. Portu Pereyra—p 842

Hereditary Ataxia—The ataxia developed at the age of 8. It was of the true hereditary type although no other cases were known in the family. As the girl grew up, certain symptoms suggested optic neuritis from a brain tumor, but the edematous pseudoneuritis subsided after proper lenses had been prescribed.

Pernicious Anemia and Purpura—Anemia of pernicious type developed in the course of a month in purpura of eleven months' standing. The man lived on a sailing vessel, and the unbalanced diet was evidently responsible for the disturbances. The authors suggest that in all cases of pernicious anemia it is wise to seek for deficiencies in diet.

Leprosy in Uruguay—Brito Foresti states in this official report that there are 197 known cases of leprosy in Uruguay. This is a minimal proportion of one case to 7,500 inhabitants—about the same as in Norway. The principal complications in the cases he has encountered are acute nephritis and tuberculosis.

Archiv für klinische Chirurgie, Berlin

Dec 23 1922 122, No 2

- *Camphor Phenol in Treatment of Joints A. Hedri—p 281
- *Osteomyelitis of Ribs F. Michelsson—p 314
- *Reconstruction of Jaw and Chin A. Eiselsberg and H. Pichler—p 337
- *The Urochromogen Reaction M. Flesch Thebesius and B. Lion—p 370
- Foreign Bodies in Esophagus H. Killian—p 382
- *Preparedness of the Stomach for Ulcer L. Moszkowicz—p 444
- *Cardiolysis After Gunshot Wound of the Pericardium R. Strebel—p 500
- Drainage After Goiter Operations J. Ujhelyi—p 522
- *Prophylaxis of Peptic Ulcer Haberer—p 534
- *Complications with Artificial Esophagus C. Hirschmann—p 553

Action of Camphor and Phenol in Joints—Hedri writes from Pavris service to extol the results from filling the capsule of a joint with Chlumsky's mixture of 30 parts liquid phenol, 60 parts pulverized camphor and 10 parts alcohol.

In 20 rabbits, 39 joints, injected with 1, 2 or 3 cc, showed no sign of injury at the time or later. None of the 7 clinical cases given preventive camphor-phenol treatment developed suppuration. The 12 cases with existing suppuration were all favorably influenced, and nothing suggesting arthritis deformans has developed. Thirty-three illustrations and a bibliography accompany the article.

Primary Infectious Osteomyelitis of Ribs—Michelsson states that the lesion was in the ribs only in sixteen of the total 1,008 cases of osteomyelitis at the Riga clinic. The cases compiled from the literature bring the total to eighty. Spontaneous recovery is highly improbable, but early operative treatment offers every prospect of a permanent cure.

Reconstruction of Jaw and Chin—This profusely illustrated article reports excellent results when a double pedicled flap from the scalp is drawn down like a cap band to cover the chin. The part of the flap extending on the brow is used for the lining of the lower lip.

The Urochromogen Reaction in the Urine—In four cases of fatal surgical tuberculosis the urochromogen reaction had been positive. It veered to positive in time in all cases with unfavorable course, while in all cases improving or cured, the reaction was constantly negative or became negative sooner or later. Study of 100 cases indicates that the reaction must be supervised for months to be really instructive. None of the patients with a negative reaction died. The test is applied to fresh night urine, 8 cc is mixed with three volumes of hydrant water and half is poured into another reagent glass. Then 2 or 3 drops of the 1:1,000 solution of potassium permanganate are added to one of the glasses. A canary yellow tint at the end of an hour is a positive reaction.

Foreign Bodies in Esophagus—Killian refers to cases with various complications. In 380 operative cases the mortality was 21.3 per cent, but the mortality increased with complications. He discusses the indications for operative treatment, and emphasizes the importance of the after-care.

Preparedness of the Stomach for Ulcer—Moszkowicz' photomicrograms confirm the histologic anomalies which are evidently a factor in gastric ulcer.

Drainage After Goiter Operations—Ujhelyi writes from Bier's surgical service to denounce drainage after operations on the thyroid. He declares it is an unnecessary evil.

Prophylaxis of Postoperative Peptic Ulcer—Haberer argues that no technic guarantees against peptic ulcer, but resection by the Billroth I method has the best record in this line to date.

Reconstruction of the Esophagus—Hirschmann's seventeen illustrations show the various complications liable with an extrathoracic esophagus, and the means to avoid and correct them.

Deutsche medizinische Wochenschrift, Berlin

Dec 29 1922, 48, No 52

- *Uremia H. Strauss—p 1719
- Urinary Calculi F. Voelcker—p 1721
- *Results of War Amputations and Prostheses F. Lotsch—p 1723
- *Treatment of Peritonitis with Ether C. Stieda—p 1725
- Coxitis and Spontaneous Luxation in Influenza Ochsenius—p 1726
- Habitual Vomiting of Infants A. Dollinger—p 1726
- *Prophylaxis of Puerperal Fever H. Kritzler—p 1726
- Anaphylaxis in Protein Treatment Neumann Spengel—p 1727
- *Carcinomas of Colon L. Kuttner—p 1727
- Bleeding and Tamponade of Nose Finder—p 1729
- Niessen's Bacillus of Smallpox H. A. Gins—p 1730

Uremia—Strauss gives a short survey of the two different forms of uremia (eclamptic and true uremia), and mentions also the vascular syndromes. The treatment of true uremia consists in large venesections and treatment of the heart. If the patient is unable to retain fluids, intravenous infusions of 200 cc of a 20 per cent solution of glucose, or in enemas, are valuable. In eclamptic forms, the heart is also important. Narcotics are valuable, lumbar puncture relieves the patient, and large venesections should never be omitted. Rest is essential. Decapsulation of kidneys is to be recommended when a suburemic condition develops in marked oliguria.

Results of War Amputations and Use of Prostheses—Lotsch reviews the results of different methods. Very few

[illegible]

Comparative Liver Function Tests—Hesse and Havemann had comparatively good results with chromocholoscropy after injections of indigocarmin. Widal's test was positive only in one case out of sixteen in which no liver lesion was present. The increase in blood sugar over 15 per cent after ingestion of 15 gm of sodium lactate is a good liver function test. They recommend the use of several tests because all the functions of the liver are not necessarily affected in every case.

Cause and Treatment of Perforating Ulcer of the Foot and Elsewhere—Kappis believes that the perforating ulcer is a decubital or traumatic (thermic, etc.) ulcer in a part with lowered sensibility. In most of the cases a fistula of the joint is present. It does not heal because the regeneration in a paralyzed tissue is not normal. The treatment has to endeavor to restore the nervous supply. Locally a resection of the affected joint is to be recommended. Sympathectomy may be tried.

Burns of Skin—Schriddle found that burns due to electric currents are histologically identical with those provoked by application of great heat (cautery).

Specificity of Tuberculin Reaction—Tobias finds only quantitative differences between the reactions following tuberculin and nonspecific proteins. Yet he admits that the toxic component of tuberculin has a stronger affinity for the specific foci.

Puncture of Testicles in Dead Bodies—Muhsam made punctures of the testicles in dead bodies and concludes that the method might give reliable clinical results when it is desired to know whether the testicle is able to form spermatozoa.

Soft Food Containing Little Fluid—Alkan in all cases with gastric hypersecretion uses a diet containing very little fluid. The food does not require chewing.

Some Clinical Chemical Methods—One of Citron's methods consists in the determination of the amount of fluid in the fasting stomach. The patient drinks a certain quantity of a solution of urea. Immediately afterward a stomach tube is introduced, and the percentage of urea in the fluid thus obtained is compared with the original. The urea nitrogen is determined by the hypobromite method. If the patient took 100 cc of a urea solution containing N per cent of nitrogen and the mixed stomach juice contains N₁ per cent of nitrogen, the amount of fluid which was present in the fasting stomach is $\frac{100(N-N_1)}{N_1}$.

15

N₁

Medizinische Klinik, Berlin

Dec 17 1922 18, No 51

*Gaucher's Splenomegaly H Lippmann—p 1607

*Cancer and Self Protection of the Organism C Bayer—p 1610

*Dry Gonococcus Vaccine A Buschke and E Langer—p 1613

*Intravenous Injections of Oily Substances Lenzmann—p 1614

*Relation of Malaria in Berlin to Arsphenamin G Hamel—p 1615

Polyarthritus and Pyelitis R Korbach—p 1617

Treatment of Oxyuriasis with Arsphenamin K Hajos—p 1619

Portable Apparatus for Pneumothorax I W Samson—p 1620

Roentgen Ray Diagnosis of Duodenal Ulcer G Herrnheiser—p 1621

Intravenous Injection of Concentrated Arsphenamin J R Thim—p 1623

Conc n

Physicochemical Foundations of Spasmophilia H Hummel—p 1626

Gaucher's Splenomegaly—Lippmann reports a case of this rare familial disease. The splenomegaly, enlarged liver, yellow complexion, leukopenia, which changed into a leukocytosis after injections of epinephrin and during the dysentery led to the diagnosis. In the puncture fluids and 'harpoon' specimens from the spleen the usual big cells were present, but they did not contain free cholesterol. The cholesterol content of the blood was low. The patient is still living, and in comparatively good general condition.

Cancer and Self-Protection of the Organism—Bayer reviews the etiology of carcinoma and the protecting action of the organism and discusses means to enhance it.

Dry Gonococcus Vaccine—Buschke and Langer found most of the commercial vaccines without effect and their protein content very low. They attribute it to autolysis. A dry

vaccine prepared from gonococci had good therapeutic effects, but the injections were so painful that they had to be discontinued.

Intravenous Injections of Oily Substances—Lenzmann points out that small amounts of oil (0.25 gm) cannot lead to an obstruction of the pulmonary circulation.

Treatment of Oxyuriasis with Arsphenamin—Hajos reports favorable results with the use of 0.9 gm neo-arsphenamin by the mouth in seven adults.

Dec 24 1922 18, No 52

*Importance of the Anamnesis in Diagnosis W Neumann—p 1637

*Psychophysical Relations in Internal Medicine F Mohr—p 1639

*Akinesia in Chronic Blepharospasm H H Elschning—p 1641

Treatment of Fistula of Anus H Sieben—p 1641

Habitual Luxation of the Clavicle H v Ortenberg—p 1642

Forceps of the Practitioner H Strube—p 1645

Diseases of the Bladder E Portner—p 1646

Recent Literature on Soft Chancre F Pinkus—p 1648

Tuberculosis of Lungs and Pathology of Personality—Neumann shows in a special case of tuberculosis the importance of an exact history of the patient, and gives interesting details which result from comparison of the anamnesis with the findings of minute physical examination.

Psychophysical Relations in Internal Medicine—Mohr finds that too little stress is laid on the fact that every somatic disturbance necessarily conditions psychic disturbances, and vice versa.

Therapeutic Akinesia in Chronic Blepharospasm—Elschnig paralyzed the orbicular muscle of the eye with procain in a case of blepharospasm of several years' duration. The injection was made by Van Lint's technic for operations on cataracts. The result was good although not permanent, and the injections had to be repeated a few weeks later.

Munchener medizinische Wochenschrift, Munich

Dec 22, 1922, 69, No 51

*Migraine in Children H Curschmann—p 1747

*Optimal Action of Syphilitic Antigens J Hohn—p 1750

*Leukopenia as a Reflex of the Autonomic System E F Muller—p 1753

Spontaneous Formation of Loose Bodies in Joints E Roesner—p 1757

Turning of Heart in High Position of Diaphragm Zezschwitz—p 1758

Louis Pasteur M Gruber—p 1758

Protection of Language in Science E Lick—p 1760

Treatment of Tuberculosis and Lupus of Nose G Spiess—p 1762

Medical Supervision of Athletics K A Worrington—p 1763

Technic and Interpretation of Ventriculography W Weigoldt—p 1764

Migraine in Children—Curschmann states that migraine in children is much more frequent and important than appears from textbooks. This neglect is due to the fact that the condition is rare in clinics. Yet it is frequent in private practice. Abdominal symptoms are characteristic. Many supposed colics, many cases of supposed appendicitis, ulcer of stomach and duodenum are migraine. Heredity is practically always present. The attacks are strictly periodic. Fever may be present.

Optimal Action of Syphilitic Antigens—Hohn finds that the main difference between the complement fixation and the precipitation tests lies in the large amounts of serum which are necessary for the precipitation (about eight times more than in fixation). The colloidal state of the antigen is of the greatest importance. He recommends an antigen which after dilution shows with a magnifying lens (6x) extremely fine granules. The concentration of sodium chlorid is also important and it must be titrated.

Leukopenia as a Reflex of the Autonomic System—Müller found that intracutaneous (not subcutaneous) injections of indifferent substances (including normal saline and even air) cause leukopenia. Addition of minimal amounts of epinephrin delays the reaction. The phenomenon seems to be a reflex due to stimulation of the vagus. The end point of the reflex lies in the vessels of the abdomen. Their dilatation causes slowing down of the blood stream and accumulation of leukocytes in the abdominal organs. Increased tonus of the sympathetic system prevents this leukopenia. He agrees with Glaser's explanation of Widal's hemoclastic crisis as a vagus reflex. The liver has no direct influence. The cause is a change in the equilibrium between the vagal and sympa-

thetic tonus The phenomenon cannot be used as a liver function test

Dec 29 1922 69 No 52

- *Action of Different Strains of Spirochetes Plaut and Mulzer —p 1779
- Bismuth in Syphilis Felke —p 1781
- *Cultures of Spirochetes in Arsphenamin W Krantz —p 1782
- Physiology of Labyrinth M H Fischer —p 1783
- Some Points in Microscopic Technique Carl —p 1785
- Advertisements in the Reception Room Scherbak —p 1787

Action of Different Strains of Spirochetes on Nervous System of Rabbits—Plaut and Mulzer studied the neurotropy of different strains of spirochetes on rabbits The work as well as the whole field of experimental syphilis of the nervous system is made easily accessible by Plaut's suboccipital punctures of rabbits The Wassermann reaction was always negative in rabbits' cerebrospinal fluid, but micromethods for the globulin test, cell counts, mastic and goldsol reactions gave good results While one strain only exceptionally caused changes in the cerebrospinal fluid, another strain led to such changes almost regularly Histologic findings confirmed these "clinical" results They used also strains from the cortex of two cases of general paresis which caused in three generations of rabbits typical changes in the fluid without local changes at the place of inoculation The histologic changes in these cases closely resembled those of human general paresis

Cultures of Spirochetes in Mediums Containing Arsphenamin—Krantz found that neo-arsphenamin did not inhibit the growth of spirochetes in Schereschewsky's medium in a concentration of 1:5,000 This is twice as strong as that in the blood of a patient after administration of 0.5 gm of the drug

Wiener klinische Wochenschrift, Vienna

Dec 21 1922 35, No 51

- *Roentgen Ray Diagnosis of Duodenal Ulcer M Haudek —p 987
- Dengue M Eugling —p 991
- Roentgen Diagnosis of Duodenal Ulcer G Singer —p 993
- Dosage Stimulating Doses and Radiosensitivity K Ullmann —p 994
- *Sedimentation of Erythrocytes Poindecker and Siess —p 997
- Scabies in Vienna M Oppenheim —p 998

Roentgen-Ray Diagnosis of Duodenal Ulcer—Haudel relies on roentgen ray for diagnosis In seventy cases in one and a half years, thirty-six diagnoses were confirmed by operation, and only two were disproved He describes his technic and the roentgenologic symptoms of duodenal ulcers

Sedimentation Speed of Erythrocytes—Poindecker and Siess find that accelerated speed of sedimentation is a good indicator of the activity of pulmonary tuberculosis, and therefore is important for prognosis Occult focal reactions may be made apparent by this method

Dec 28 1922 35 No 52

- Treatment of Tuberculosis J B Andreotti —p 1005
- *Spontaneous Entero Anastomosis L Berczeller and Z Szilard —p 1006
- *Hypertonic Solutions and Gastric Secretion J Karmel —p 1007
- Extensive Cervicovaginal Fistula with Six Weeks Ovum E Graff —p 1011
- Curettage of Conjunctiva in Chronic Catarrhs N Blatt —p 1011
- Test for Patency of Tubes L G Dittel —p 1013
- Comment on Indications for Roentgenotherapy L Freund —p 1013

Spontaneous Anastomosis of the Intestine—Berczeller and Szilard ligated the rectum of white rats fed with starch, a food which could be almost entirely absorbed They found that the passage was regularly restored in four or five days The experiments were negative if the ligation was made in the proximal parts of the colon, or on the ileum

Action of Intravenous Hypertonic Solutions on Gastric Secretion—Karmel found that hypertonic intravenous solutions, especially of sugar (20 c.c. of a 50 per cent solution) decrease gastric secretion

Test for Patency of Tubes—Dittel points to the danger of Rubin's method due to the possibility of pneumonia or infection

Zentralblatt fur Chirurgie, Leipzig

Dec 30 1922 40, No 51

- Comment on Nerve Blocking in the Leg O Wiedhopf —p 1011
- Spastic Ileus in Influenza F Colmers —p 1031
- Collapse of Anterior Transverse Arch of Foot G H —p 1031
- Contusions of the Kidney E Hugel —p 1032

Spastic Ileus in Influenza—Colmers mentions three cases of spastic ileus associated with influenza, in all of which an operation was performed No obstruction was found but only spastic contraction of the intestine, which had given rise to the clinical symptoms This condition may occur frequently during an epidemic of influenza If colicky pains and similar symptoms associated with diarrhea and vomiting appear, spastic ileus should be suspected In his cases an erroneous diagnosis was more or less excusable, since the onset of ileus symptoms was acute and, in spite of all treatment, the vomiting could not be checked nor the severe subjective symptoms relieved In doubtful cases, however, he would still prefer to make a small abdominal incision, in order to discover the true condition of affairs, rather than run the risk of overlooking true intestinal occlusion Spastic ileus in influenza may be due to the action of the central nervous system on the intestinal musculature An irritation produced by pathologically affected mesenteric glands may play a part, or possibly a toxic influence from the intestinal contents

Zentralblatt fur Gynakologie, Leipzig

Dec 23 1922 46 No 51

- *Roentgen Irradiation in Amenorrhea H Thaler —p 2034
- *Lipoids in the Corpus Luteum T Wiczynski —p 2044
- Comment on Muller's Physiologic Ascites in Women J Novak —p 2050
- *Ileus During Pregnancy H A Dietrich —p 2052

loop of the small intestine above the uterus was found to be with torsion of 270 degrees. When the torsion was reduced, an extensive invagination 60 cm long was noted and 15 meters of the small intestine had to be resected. The volvulus may have been caused by the expanding pregnant uterus. Dietrich states that frequently in ileus associated with pregnancy the first symptoms are incorrectly interpreted, and the best time for operation is allowed to slip by.

Teratoma Evacuated Through the Rectum—Ohrenstein reports a peculiar case of teratoma in a woman, aged 26. At the age of 5, a long tuft of hair suddenly appeared at the anal opening, and later reached a length of about 10 cm, so that the patient was compelled, from time to time, to cut off the hair that protruded. She always had the feeling of a foreign body in the rectum. The stool during all the years had presented the form of a hollow cylinder. She had had no particular trouble except in the case of hard stools. A few hours before admission to the hospital, at the age of 26, a profuse rectal hemorrhage occurred, and, at the same time, a tumor appeared at the anal opening, the size of a man's fist. The apex was irregularly lacerated and the color was bluish black. A tooth appeared in the lacerated opening and was removed. The tumor was attached to a pedicle, which extended from 11 to 12 cm within the rectum. The following day laparotomy was performed, the utero-ovarian ligament was divided close to where it entered the intestine and was removed with the left tube. A degenerated portion of the right ovary was also resected. The tumor was drawn from the rectum by the pedicle, and the pedicle was excised from the rectal wall. Recovery was uneventful. The tumor was a typical teratoma with all three germ layers represented.

Casopis Lekaruv Ceskych, Prague

Dec 23, 1922 61 No 51

- *Action of Epinephrin on Formation of Antibodies A Hrma—p 1217
*Treatment of Encephalitis Parkinsonism K Henner—p 1223 Conc n

Action of Epinephrin on Formation of Antibodies—Hrma tested the action of epinephrin injections on formation of hemolysin, on the complement content, on restitution of a lowered titer of immune hemolysins, and in some other instances. The results were entirely negative.

Treatment of Postencephalitic Parkinsonian Syndromes with Sodium Cacodylate—Henner reports the results of this treatment in fifty-two cases, with 1,300 injections. Nearly 2,000 injections were given at the clinic without such mishaps as have been described by French authors. The solution used was sodium cacodylate 0.50 gm in 2 cc of twice distilled water. The solution must not be older than two days. The intravenous injections were given three times weekly, starting with 1 cc and increasing to 4 cc. At the end of one course the amount was decreased to 1 cc. The whole course required a total of from 30 to 65 gm of sodium cacodylate. After three weeks the treatment was repeated. Four such courses were given. Nicotin, alcohol, caffeine are harmful. Physical treatment was used if the disease did not show signs of activity. The urine should be watched for albumin and sugar. After the injection no heavy meals are allowed. Of the fifty-two patients, forty-nine were influenced favorably.

Acta Medica Scandinavica, Stockholm

Dec 21 1922 57 No 4

- New Method for Counting Blood Platelets in Man A Kristenson—p 301
Spinal Deviation of Intentional Movements S Ingvar—p 313
*Red Corpuscles and Their Variations E J Rud—p 325 Begun No 2 p 142
Present Knowledge of Incomplete Bundle Branch Block N Stenstrom—p 382
The Classification of Human Blood S Hesser—p 415

New Method for Counting Blood Platelets in Man—Kristenson dilutes one part of blood with nine parts of a solution consisting of 10 gm of urea, 25 gm of sodium citrate, 0.005 gm of mercuric chlorid and 0.5 gm of brilliant cresyl blue in 500 cc of water. The fluid hemolyzes erythrocytes and colors white corpuscles and platelets.

"Spinal" Deviation of Intentional Movements—Past Pointing—Ingvar observed a deviation of the movement of one

arm (in pointing to a place), if the person abducted the other arm, and especially if a weight was held in the abducted extremity. The phenomenon occurs only in the Romberg position, and not if the person is seated comfortably. Ingvar explains it as an unconscious compensation to preserve the equilibrium, and believes that the deviations due to the vestibular apparatus are also compensatory balance reflexes.

Red Corpuscles and Their Variations—Rud found no constant or distinct influence of meals, time of the day, menstruation, site of puncture, and the venous or arterial origin on the relative number of erythrocytes. Of all physiologic conditions, pregnancy was the only one which decreased the number of red corpuscles.

The Classification of Human Blood—Hesser examined forty serums for isoagglutinins and isohemolysins. He found that both properties belong in the same groups. If the hemolysins are not strong enough to dissolve fresh blood, their action can be demonstrated on old erythrocytes.

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Hallux Valgus and Its Operative Treatment—Sandelin found flatfoot accompanying hallux valgus in 59 per cent of the total 536 cases. The foot was normal in only 79.8 per cent. In 54 per cent hereditary influence was manifest, and in 23 per cent of the others no data were known. Recent reexamination of 116 of the 147 patients given operative treatment since 1904 showed excellent results with the Hueter method in 70 per cent. The head of the bone is cut off with straight nippers. Sandelin advises against resection for cosmetic purposes alone. Massage hastened recovery after the operation.

Turpentine in Treatment of Adnexitis—Nyström had good results from intramuscular injection of turpentine in some cases of gynecologic inflammation. But on the whole the results were disappointing.

Alimentary Glycosuria as Early Test for Pregnancy—Leskinen applied the Kamnitzer method in 48 women, 13 in the first three months of pregnancy and 31 nonpregnant controls. The test is an intragluteal injection of 2 cc of a solution of 0.03 parts of phlorizin in 30.5 parts distilled water, with 0.015 parts procain. It is applied in the morning before eating, and at the same time the patient drinks 200 cc of water. The urine voided half an hour later is examined and another glass of water is ingested. At half hour intervals the Nylander test is applied to the urine. The reaction is positive when precipitation occurs on boiling for one minute. In the 13 pregnant women the test was positive in 12 and positive on repetition a month later in the thirteenth. It was positive in 2 of the 4 cases of abortion. It was positive likewise in 15 per cent of the 31 nonpregnant women. Hence the test is not infallible. The positive reactions all occurred within the first hour.

Transfusion of Blood in Pernicious Anemia—Savolin gives the details of fourteen cases of Biermer's anemia treated in Tallqvist's service by injection or transfusion of blood. One woman now aged 41, had typical pernicious anemia in 1909. It improved under arsenic treatment but constantly recurred. In 1915 the hemoglobin was 40 per cent, the erythrocytes 1,900,000. An intramuscular injection of defibrinated blood was followed by high fever but she began to improve, and promptly regained full earning capacity and has felt entirely well during nearly eight years since. A sister and aunt had died from pernicious anemia. In three other cases transfusion of blood had a very favorable influence. One man is still well two years later.

The Autonomic Nervous System—Tallqvist reviews the pathologic physiology of the vegetative nervous system that has proved of practical value.

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RELATION OF CLINICAL TO NECROPSY DIAGNOSIS IN CANCER AND VALUE OF EXISTING CANCER STATISTICS

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Among the factors often mentioned as responsible for the undemable fact that more deaths from cancer have been recorded in recent years than formerly is the increment of cases of cancer recognized at necropsy that were unrecognized during life. These added cases help to swell the cancer death rate, and hence, the more advanced the medical profession of a given community, the more necropsies, and the smaller the number of cancers that escape inclusion in the vital statistics of the community. The experience of necropsy disclosure of a clinically unrecognized malignant growth is so common that this factor is always brought forward when the alleged increase in the frequency of cancer is under discussion, and it is universally admitted. Despite the recognition and acceptance of this factor, however, we have very little in the way of actual evidence as to its real importance.

The most quoted paper is that of Reichelmann.¹ He examined the records of 7,790 necropsies at the Hospital Friedrichshain zu Berlin, from April 1, 1895, to June 24, 1901, among which there were 711 carcinoma cases, or about 9 per cent. He does not include sarcomas or forms of malignancy other than carcinoma. Among these 711 carcinoma cases were 156, or 22 per cent, that were not recognized during life as malignant disease, irrespective of whether the site or the character of the growth was correctly diagnosed. That is to say, if necropsies had not been performed in these cases, the vital statistics would have contained 555 instead of 711 cases of cancer from this group of deaths, i. e., necropsies added about 28 per cent. On the other hand, fifty-eight cases were diagnosed cancer when this condition was not present, so actually the figures are as follows. In 769 cases, cancer was either diagnosed correctly (62.5 per cent.), missed when it was present (20 per cent.) or diagnosed as present when there was no cancer (7.5 per cent.). Subtracting the cases added by erroneous diagnosis of cancer when it was not present (fifty-eight) from the number added by missing the cancer (156), we find that the performance of necropsies actually added ninety-eight cases to the vital statistics, or about 15 per cent. Carcinoma was diagnosed correctly 555 times, and incorrectly fifty-eight times, and was missed 151 times when present, so that there were 214 errors to 555 correct diagnoses, a diagnostic error of 27.5 per cent in the 769

cases. Reichelmann cites also a paper by Hofmann² based on hospital statistics in Kiel, not available to me, which showed an addition of 19.6 per cent to the cancer figure through necropsy.

A statistical study of the cancer cases in a large number of London hospitals has been reported by Bashford,³ who discusses the influence exerted by microscopic examination in cancer statistics, but in these figures no exact distinction is made between cases examined at necropsy and tumors removed at operation and then examined microscopically. In all such cases, of course, the cancer had been viewed and a gross anatomic diagnosis had been made. This includes most of the tumors classed as accessible in Table 1.

Even in this group of cases, microscopic study, either with or without necropsy, added 121 cases to the 683 recognized without the aid of the microscope, or nearly 18 per cent. Presumably, the inaccessible cases alone were recognized first by necropsy, and here we find 106 added to 284, or 37.3 per cent.

In view of the fact that the foregoing statistics were compiled in other countries, and at a period when the roentgen-ray examination was not available with its important diagnostic aid, it seemed worth the labor to ascertain how things stand in this respect in a material under my own observation. I have, therefore, gone over the available necropsy records of the Cook County Hospital for the years 1917-1922, inclusive, comprising about 2,712 necropsies, and also 1,000 other records of my own necropsies not included in these statistics, although many of them were performed in the Cook County Hospital at an earlier date than 1917. In these 3,712 necropsies were disclosed 545 cases of malignant disease, or 14.7 per cent. Our figures cover all forms of malignant tumor, including cerebral gliomas and endotheliomas, that were met with on the necropsy table.

The summary of these records in respect to the chief question under consideration, i. e., how many cancers are recorded in the vital statistics that would have been omitted but for necropsy, is given in Table 2.

To offset this large error of omission, we find errors of commission, i. e., cancer diagnosed as present when no malignancy was found at necropsy, there being twenty-three such in the Cook County Hospital figures and ten in the University of Chicago figures, making a total of thirty-three to be subtracted from the 178 erroneously added. Therefore, our necropsies add to the 400 cases diagnosed cancer during life (367 correctly and thirty-three incorrectly) 145 cases, or 36.25 per cent. In 578 cases (367 correct, 178 erroneously called cancer), the thirty-three erroneously called cancer, the incorrect diagnoses, or a diagnostic error of 5.71 per cent.

² Hofmann Statistik der nicht durch
Disse Kiel
³ Bashford Scientific Reports
Fur London 1902 No 2 Part 1

When we tabulate our cases, we find that an excessively small proportion are in sites accessible to direct examination. Divided on this basis we have the results presented in Table 3.

These figures indicate that, as is to be expected, few of the errors are made with external tumors.

TABLE 1—DIAGNOSIS OF NEOPLASMS

	Malignant Neoplasms		Not Cancer but Wrongly Diagnosed as Cancer
	Correctly Diagnosed	Not Diagnosed	
Accessible	399	43	28
Inaccessible	284	109	3
Total	683	152	31

One of the chief reasons why our figures of error are so high is the fact that they include very few cases of external cancer. In most cases of external neoplasms, the condition is so obvious that little or no effort is made to obtain permission for a necropsy. On the other hand, it is in the cases in which there has been difficulty in arriving at a correct diagnosis that the permission is sought with the greatest zeal and most readily secured. Undoubtedly, the greatest influence in accounting for the large proportion of unrecognized internal tumors is the fact that so large a proportion of the cancer cases in American municipal hospitals occur in patients who are brought into the hospital when moribund or nearly so, wherefore adequate clinical study cannot, and often should not,

TABLE 2—PERCENTAGE OF CASES DIAGNOSED BEFORE AND AT NECROPSY

	Cook County Hospital	University of Chicago	Total	Percentage
Correctly diagnosed as malignant tumors*	257	110	367	67.34
Not recognized as malignant tumors	125	53	178	32.66
Total	382	163	545	100.00

* Irrespective of whether the location or the character of the malignant growth was correct.

be made. The error in diagnosis of internal tumors, 37.1 per cent, was almost exactly the same as that reported for inaccessible tumors in the London hospitals, 37.3 per cent.

As to the diagnosis of the more commonly occurring tumors, we have in Table 4 the figures on the Cook County Hospital material, which is selected as being more nearly homogeneous as to clinical conditions than the material from my own necropsies.

This table shows that few tumors of the uterus or rectum escape recognition, as might be expected. Most of the errors here were in patients dying of some complicating condition and in a state of dissolution too advanced for thorough examination. However, it is to be admitted that there were some inexcusable errors made through neglect. For example, one patient was studied most carefully by two excellent internists because of peculiar physical findings in the chest, which led to a debate as to whether the lesion might not be a pulmonary syphilis. Their examination apparently was limited to the chest for they accepted the junior intern's note on the history that the vaginal examination was negative. There was, however, an ulcerating carcinoma of the cervix with extensive metastasis in the right pleura.

Carcinomas of the stomach, esophagus and prostate were usually recognized, although about one third were not correctly diagnosed. As might be expected, primary carcinoma of the liver and lung most often escaped recognition. Our figures in Table 5 show that, at least in the Cook County Hospital material, primary lung and liver carcinomas are far from uncommon. Primary pancreatic tumors were not often correctly diagnosed, although the malignancy was frequently recognized but not correctly located. The same is true for primary carcinoma of the bile tracts. The low figure for the diagnosis of the brain tumors undoubtedly depends on the fact that in many cases the clinical manifestations were those of a complicating hemorrhage into the brain substance, while other patients were brought into the hospital dying in coma, with no available history.

TABLE 3—DIAGNOSIS OF EXTERNAL* AND INTERNAL TUMORS

	Cook County Hospital	University of Chicago	Total	Percentage
External tumors correctly diagnosed	61	21	82	89.1
External tumors not recognized	5	5	10	11
Internal tumors correctly diagnosed	106	89	285	62.9
Internal tumors not recognized	120	48	168	37.1

* Under external tumors are included carcinomas of the skin, mouth, tongue, pharynx, breast, uterus and penis and sarcomas of the extremities or superficial structures but not carcinomas of the rectum, bladder or larynx.

The sort of errors in diagnosis varied, of course, with the site of each tumor. Thus, in carcinoma of the stomach, the errors were extremely varied, of the thirty-six errors, the diagnosis was heart disease (usually myocarditis) in six, and cirrhosis, pulmonary tuberculosis, carcinoma of the esophagus and carcinoma of the colon in four each. In carcinoma of the esophagus, among fifteen errors, pulmonary tuberculosis appears four times, while aneurysm was the mistake but once. Carcinoma of the pancreas, diagnosed correctly in but four of twenty-two cases, was miscalled carcinoma of the stomach six times, cirrhosis four times, and carcinoma of the liver three times. Carcinoma of the bile tracts, correctly diagnosed but four times in fifteen cases, was called carcinoma of the stomach in

TABLE 4—DIAGNOSIS OF MORE COMMONLY OCCURRING TUMORS (COOK COUNTY HOSPITAL)

	Total	Correct	Malignancy Correct but Site In correct	Diagnosed as No malignant or No	Correct per Cent	Correct as to Malignancy per Cent
Carcinoma of Stomach	103	67	11	25	65	76
Esophagus	41	26	3	12	63	70
Pancreas	22	4	9	9	18	59
Bile tracts	15	1	5	6	27	60
Liver	10	1	2	7	10	20
Colon	17	8	1	8	47	53
Rectum	14	11	1	2	80	86
Bladder	18	8	3	7	44	61
Prostate	8	5	1	2	63	75
Uterus	21	17	1	3	81	86
Lung	11	1	2	8	9	27
Intra-cranial tumors	23	9	0	14	39	39
Renal tumors	9	4	2	3	44	67

five cases, and the diagnosis of gallstones was made but once. Obstructive jaundice was the diagnosis in three cases. Primary carcinoma of the liver was entered correctly as liver neoplasm in but one case in ten, cirrhosis being the diagnosis in five cases. Primary lung tumors, recognized in but one of eleven cases, and interpreted as intrathoracic tumor in two others,

was diagnosed pulmonary tuberculosis in four cases and pneumonia in two. The intracranial tumors, correctly diagnosed nine times in twenty-three cases, were interpreted as cerebral thrombosis and as epidemic (lethargic) encephalitis three times each, and twice each as cerebral syphilis and paresis.

Taking all the tumors of whatever location, we find the following to have been the commonest erroneous diagnoses: cirrhosis, twenty-one, pulmonary tuberculosis, eighteen, heart disease, usually myocarditis, eleven, pneumonia, seven, nephritis, six, jaundice, six, paresis, six, generalized tuberculosis, five. Naturally, in many of the advanced cases coming into the hospital, the terminal condition was recognized without the responsible malignancy being found, and so we have such diagnoses as intestinal obstruction, peritonitis, anemia, septicemia, dysentery, diabetes (one pancreatic cancer, one brain tumor), and abscess, as well as pneumonia, in several cases.

A study of the distribution of all the tumors (Table 5) reveals several significant facts. First is the great predominance of tumors of the alimentary system, which constitute more than half of all the cases. The fact that the character of the cancer cases seen in a large public hospital is not a fair representation of the character of cancer in the community at large is indicated by the relative infrequency of the chief external cancers, i. e., the skin, six, tongue, seven, mouth, lips and pharynx, twelve, uterus, twenty-seven, and breast, sixteen. If our statistics had been compiled from the admission records of a large surgical hospital, we should have had a totally different picture, with these very sorts of operable tumors predominating over cancer of the stomach, esophagus and pancreas. In our material, we find the supposedly rare primary cancers of the liver, fifteen, and lung, seventeen, ranking with cancers of the mammary gland, sixteen, while cancers of the pancreas, thirty-two, and intracranial tumors, thirty-three, exceed the uterine cancers, twenty-seven, which barely outnumber the respiratory tract tumors, twenty-five. Despite the obviously misleading character of such selected material as these hospital statistics furnish, we find medical literature full of erroneous statements based on just such statistics.

There were fifty sarcomas among 545 malignant neoplasms, or about 9 per cent of all. This figure is rather lower than that given in most tables of cancer statistics. Probably there is some exclusion of sarcomas of the extremities from our necropsy material for the same reason that we find external carcinomas scantily represented. Another factor is probably a more critical acceptance of the diagnosis of sarcoma than was once general. It is being appreciated more and more that not all round and spindle cell tumors are sarcomas, and that carcinomas are much more often mistakenly called sarcomas than the reverse. We have not included any of the testicle tumors among the sarcomas, where most of them are usually placed in classification, for we are convinced that they usually represent tumors of specialized cells of mesodermal origin, and that they are rarely true sarcomas.

In all these necropsies, there was but one instance of a definitely benign tumor causing death. In this case, which is not included in our tables, intestinal obstruction resulted from uterine fibroids.

There were four instances of coexistence of two apparently independent primary malignant tumors in the same subject: (1) carcinoma of the prostate coexisting with a carcinomatous ulcer in the pylorus, which perforated into the peritoneum, (2) glioma cerebri in

a man with a small fibrosarcoma in the skin of the thigh, (3) scirrhus carcinoma of the head of the pancreas with a typical ulcerating carcinoma of the stomach, and (4) giant cell sarcoma of the jaw with carcinoma of the prostate.

This study shows emphatically the lack of value of all recorded vital statistics on cancer. When we find diagnostic errors ranging from 25 to 40 per cent in patients who have been examined in modern hospitals in Germany, England and America, with the advantages of exploratory operations, roentgen rays and laboratory

TABLE 5—DISTRIBUTION OF TUMORS

Site and Type	Cook County Hospital	University of Chicago	Total
Alimentary canal	232	85	317
Carcinoma of			
Stomach	103	39	142
Esophagus	41	9	50
Pancreas	22	10	32
Colon	16	3	19
Rectum	14	4	18
Small intestine	—	1	1
Ampulla of Vater	1	—	1
Bile tract	15	5	20
Liver	10	5	15
Mouth lips and pharynx	6	6	12
Tongue	4	3	7
Genito urinary tract	85	34	119
Carcinoma of			
Uterus	21	6	27
Vagina	1	—	1
Mammary gland	11	5	16
Ovary	6	—	6
Testicle	7	3	10
Prostate	8	4	12
Bladder	18	—	23
Penis	2	1	3
Ureter	—	1	1
Chorio-epithelioma	1	1	2
Kidney—			
Carcinoma	4	2	6
Sarcoma	1	—	1
Hypernephroma	5	6	11
Respiratory tract	16	9	25
Carcinoma of			
Lung and bronchi	12	5	17
Larynx	4	1	5
Trachea	—	1	1
Endothelioma of pleura	—	2	2
Cerebral tumors	24	9	33
Glioma	20	5	25
Sarcoma	2	2	4
Endothelioma	1	2	3
Carcinoma choroid plexus	1	—	1
Ductless glands	10	3	13
Thyroid	5	3	8
Hypophysis	3	—	3
Suprarenal	2	2	4
Sarcomas	57	21	78
Total all sites	37	13	50
Melanosarcoma	—	2	2
Retroperitoneal	3	—	3
Mediastinal	7	—	7
Extremities	5	3	8
Endothelioma	1	4	5
Brain	1	1	2
Pleura	0	2	2
Miscellaneous	11	17	28
Carcinoma of skin	4	2	6
Carcinoma of antrum	—	1	1
Neuroblastoma	2	1	3
Chorio epithelioma	1	1	2
Multiple myeloma	1	4	5
Carcinoma primary site not located	2	4	6
Multiple tumors cases	1	3	4
Chloroma	—	1	1

studies under the most competent medical men in the community, it is certain that the diagnostic errors made throughout the country at large must be even greater. To be sure, to the large charity hospitals come an excessive proportion of patients too near death for careful study, and there come to necropsy an undue proportion of cases that are difficult of diagnosis. On the other hand, it is quite certain that a large proportion of persons who have internal cancers are not seen by physicians much earlier than are these hospital patients. It is also certain that, under the conditions obtaining in general practice, the diagnostic effort and ability will average much less than in the large hospitals.

These necropsy statistics show convincingly that we have at the present time no reliable statistics relative to the frequency of cancer as a cause of death. The futility of attempting to learn anything concerning heredity from such statistics is even more glaringly apparent. A single error in diagnosis may lead to entirely erroneous conclusions in the study of the influence of heredity on cancer in a given family. Such accuracy is obviously not present in any existing study of human heredity in respect to cancer. We shall have no exact and very little useful information concerning cancer statistics until a very much larger proportion of vital statistics depends on postmortem examination than is now the case.

ASCERTAINING THE SPLENIC INDEX AND THE MOSQUITO FOCUS FROM SCHOOLCHILDREN

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Schoolchildren can be utilized by the epidemiologist and the health officer not only in estimating the amount of malaria in a community, but also, at times, to reveal the source of the anophelines responsible for their infection. A striking demonstration of this was made at São Paulo, Brazil, in one of the field surveys made by the Instituto de Hygiene in cooperation with the International Health Board.

Health officers and plantation managers and employers of labor in regions where there is endemic malaria not only require an index of the degree of malaria, as affected by control measures, but also need to know where the dangerous breeding places are, for often money is wasted in efforts on places in which malaria-bearing anophelines do not propagate at all or in but small and unimportant numbers.

In the survey in question, the customary method of spleen examination was pursued, and blood specimens were taken as well for the endemic index or parasite rate, but in order that no time should be lost in making the anopheline survey, the information obtained from the spleen census was immediately used in the school-room to ascertain the probable location of the focus of propagation of the anophelines. This was done by grouping the children according to whether their spleens were palpable or not, and by ascertaining the residence of those with enlarged spleens. An unmistakable indication of the location of the breeding place was elicited, which was confirmed by the larval survey.

The method would seem to lend itself to those special circumstances in which it is desired to locate promptly and incriminate real and dangerous breeding places in the presence of several apparent propagation areas, or to determine the relative amount of malaria arising from two or more foci. In malarial control work it is often highly desirable to know which of the collections of water in the malarial community is the real breeding place and focus of the malaria present, so that time and money can be economized by exerting effort where it will be followed by the greatest good. In the Orient it was possible, by selective grouping of the coolies after the spleen survey, to obtain corroborative testimony as to the influence of certain propagation foci on the production of mosquitoes and of the malaria found in the coolies.

In rural communities where malaria exists, the school should furnish an index of the amount of malaria present, because of the well known frequency of splenic enlargement in children in an endemic or epidemic region, and because the children are representative of the exposed group, temporarily segregated and readily accessible to the epidemiologist or to those interested in malaria control.

In malarial infection there is a correspondence in time between the appearance of malarial plasmodia, the occurrence of fever, and the enlargement of the spleen. This takes place in new infections, in reinfections and in relapse. The splenic enlargement persists for some time after the subsidence of fever.

Groups of people without protection and constantly exposed to malarial infection and to reinfection, as is the case with many rural populations, are in a constant state of flux with regard to the manifestations of the disease. Plasmodia appear and disappear from the peripheral blood. The spleen fluctuates in size from month to month, and the splenic index in such a community reveals the degree of reaction of the people to the amount of malaria present. The longer the group is exposed to the infected mosquitoes, the higher the spleen rate becomes. The closer people live to the propagation areas of the anopheline mosquitoes, the oftener they are bitten by infected specimens, and the higher the parasite rate (endemic index) and the spleen rates are found to be. When persons remove from the endemic region, the spleen returns to normal size.

When, through the influence of antilarval measures, the propagation areas of anopheline carriers of malaria are destroyed, or whenever the mosquito host of the plasmodium is controlled, as by screening, and whenever, by quininization or other means, the amount of malaria in a region or locality is lowered, the spleen rate and the parasite rate are reduced.

When one considers that the peripheral blood findings in malaria represent in many cases only an overflow, while the great drama, as Manson explained, is often enacted in the spleen and internal viscera, and that 10 per cent or more of laborers at work in the tropical sun may harbor plasmodia in the peripheral blood, it is questionable whether the spleen rate may not be as trustworthy a measurement of malaria as clinical histories or as the results of peripheral blood examination as usually carried out.

Authorities in the Orient believe that the health officer has in the spleen rate a practical means for detecting fluctuations in the amount of malaria in a locality, and one that can be rapidly applied.

In a few instances, malaria infection is not associated with splenic enlargement, as in some cases of acute and fatal pernicious malaria and in cases of superinfection, but it is laboring an academic point to overemphasize these cases and to refuse the method on account of them, for it is certainly true that in localities constantly exposed to malaria or those visited epidemically, a correspondence exists between the amount of malaria and the spleen rates. In a large series of determinations made in Panama by Davis and myself, a correspondence between the endemic and splenic indexes was noted.

It is also true that, wherever malaria has caused splenic enlargement, the clinical history is usually sufficiently definite to permit the making of a diagnosis from the latter. Many epidemiologists, however, would welcome a method which would elicit information without the necessity of relying on the testimony of ignorant, overzealous or incooperative persons.

Stephens and Christophers¹ have shown that the correspondence is influenced by age in that in the earlier years of life—from 1 to 2 years—the parasite rate is greater than the splenic index. Above 2 years the spleen rate is in excess of the parasite rate, while above 10 years the spleen rate is greatly in excess of the parasite rate. They recommend on the basis of their experience that children between the years of 2 and 10 be used in applying the method.

But it may happen and, as a matter of fact, often does, in times of epidemic malaria or when persons come into a malarial locality who have lived continuously in a nonmalarial place, that, as they possess no immunity to malaria, they are affected very much like children in that their spleens react to the malarial poison by enlargement. Such persons may be made use of in the malarial or spleen census. This was the case with Spanish laborers and negroes from Barbados acquiring malaria for the first time as adults in Panama.

The spleen census is used universally in the Orient by those interested in malaria investigation and control. Ross regards the splenic index as by far the best measurement of malaria when large samples are taken, for the method can be applied to large numbers, and this reduces in corresponding degrees the error due to random sampling. But even with small samples important information can be obtained. The spleen rates of schoolchildren in certain regions free from malaria as London were found to be about 1 per cent.² In villages in Java I found the rates to range from nil to as high as 90 per cent plus where malaria was very severe. Barber and Coogler³ have reported spleen rates of 5 taken in the South, with a parasite rate of 5.5 in Mitchell County, Georgia, the time of year was winter.

The spleen rates have been used to measure the degree of success in controlling malaria in certain districts. Thus, Watson⁴ writes of rates rising from 3.7 to 5.8 when due to increased malaria, and to rates falling from 5.0 to 5 following antimalarial drainage works.

Swellengrebel-de-Graaf and Swellengrebel⁵ show that splenic enlargement is much reduced in an epidemic region after quininization, and that the indexes will vary after antilarval and antiadult sanitation as well as after quininization. These investigators call attention to a place on the northern coast of Java in which the spleen rate is continuously high while the hospital rate fluctuates considerably. In Samarang, Java, the admis-

was always done with the help and the attendance of the local physician, administrative officer, alcalde or priest or other influential resident citizen, so as to gain their cooperation and to enlighten them as to the conditions in the locality. The school was visited and the pupils assembled, room after room. It was convenient to use one room for all the examinations.

SURVEY OF A BRAZILIAN VILLAGE

In the survey reported here, the village of B. M. was visited in a coffee district in the state of São Paulo. The village lies near the Rio Tiete in the center of a rich coffee-producing country with soil of the "terra roxa," or red loam clay type composed of decomposed diabase. The soil is not only satisfactory for coffee culture, but was found to be suitable for brick and tile making. This discovery led to an influx of Italian tile workers. Malaria broke out soon after the arrival of the brickworkers, and it is probable that the malady was introduced at that time, for it has been severe since that date in 1912.

We did not go there to discover malaria. The people were well aware of its presence in seasonal visitations from September to February, or during the warmer months of the Southern hemisphere. We desired to ascertain the amount of the disease, detect the mosquito carriers, locate the propagation areas, and, if possible, give the people some advice as to control.

The slope on which the village is situated rises from the river. The houses in the lower part of the town and the tile factories are located near the river, being separated from it by a bluff and flood plain about 100 meters (328 feet) in width. The higher part of the village extends away from the river, and is from 30 to 40 meters above river high water. The flood plain opposite the village widens out below and across the river, affording abundant breeding places suitable for anophelines. But the village is divided by a stream through it at right angles to the river and emptying into it. The river is separated from the village by a small bluff, about 30 meters in length and emerging from the low lying flood plain. Between it and the town are some borrow-pits and ditches situated near the tile works. Into these borrow-pits there is some seepage water usually productive of anopheline breeding. But these particulars were not seen until the larval survey was made the next day. When we arrived at the village, a hasty inspection was made in order to note rapidly, if possible, the type of problem in the village. It was found that mosquitoes were present.

oriented in regard to probable mosquito-breeding areas. A record of school attendance was made, and from a representative sample blood was taken for the parasite rate.

When a room was assembled, the teacher was examined first, if a man, and blood taken for hemoglobin and parasite rate "pour encourager les autres." A sturdy looking boy or placid girl was chosen to begin the examination of the children. Boys and girls were examined separately. The ages ranged from 6 to 14. There was no preliminary consultation of parents. The girls were reassured by the presence of their teacher, who arranged the dress to facilitate in the palpation of the spleen. The work was facilitated by gaining the cooperation of teachers, who assembled the children, put them through the test with expedition, and saw to

the children from whom blood specimens were taken had positive spleens. The plasmodium was nearly always that of tertian malaria. In regard to the analysis of the malaria cases in respect to location of residence near presumptive

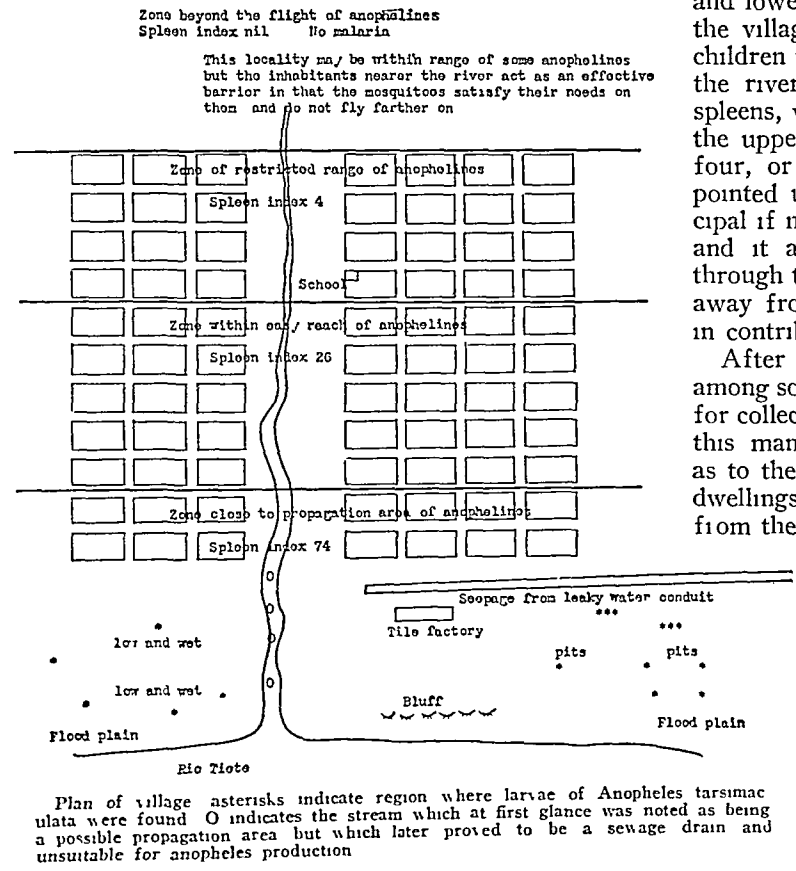
SPLFN RATE OF THE SCHOOLCHILDREN EXAMINED AT B M MAY 1 1919			
	Number Examined	Spleen Positive	Per Cent
Girls	78	26	33
Boys	72	40	55
Total	150	66	44

anopheline breeding places, the village as may be seen from the accompanying plan, was divided into an upper and lower half by a convenient street running through the village parallel with the river. Of the fifty-seven children who lived in the lower half of the town toward the river, forty-two, or 73.7 per cent, had palpable spleens, while of the ninety-three children who lived in the upper part of the town and beyond, only twenty-four, or 25.8 per cent, had palpable spleens. This pointed unmistakably to the river margin as the principal if not the sole focus of the malaria in the locality, and it appeared to eliminate the stream which ran through the village, as well as any possible place farther away from the river, as being of any real importance in contributing to the malaria of the community.

After leaving the school, we distributed test tubes among some of the liveliest of the boys with instructions for collecting anophelines in their homes. In the Orient this maneuver usually yielded important information as to the species of anophelines entering and biting in dwellings. The indications which we had received from the spleen census at the school were now utilized in a larval survey. Many propagation areas were found in the low places between the river and the town, along the flood plain and in the borrow-pits and ditches near the tile works. Here larvae of *Anopheles argyritarsis*, *A. tarsimaculata* and *A. albimanus*, well known carriers of malaria, were found in great abundance. Fewer were found across the river.

The identifications were made at once by reference to the anatomic characters of the larvae as determined by microscopic examination, without the necessity of waiting for breeding out the adults.

No breeding was taking place in the stream which ran through the village, for this, although it appeared to be a likely focus as we entered, turned out to be a



it that belts were removed, and clothing loosened, so that a large number could be examined without delay, and recorded the results of the examination.

After the examination and before the children were dismissed, they were segregated in different parts of the room, according to palpability of spleens, and as to location of dwelling place with regard to the river and the village stream. It was interesting and rather spectacular to note in this living graph that malaria as disclosed by the children with enlarged spleens corresponded with dwellings near the river margin and not with those near the village stream, or with any location behind the village.

In most instances the spleens were not greatly enlarged, being "palpable" or "one finger's breadth." In a few children the spleen was greatly enlarged. Only two children had fever at the time of the examination.

Blood specimens were not taken from every child, but only from representative age and sex groups. Half

ENDEMIC INDEX OR PARASITE RATE				
Sex	Number of Children	Number with Enlarged Spleens	Number with Positive Bloods	Per Cent with Positive Bloods
Girls	15	6	3	20
Boys	24	15	10	41

drain for the village sewage, and was too foul to support anopheline species.

The larval survey then confirmed the indications obtained from our spleen examinations, since the propagation areas were found to coincide with the areas near the homes of the malaria-infected children. This

was so interesting and important a demonstration that our survey led to control measures being instituted in the village by the state health department

2711 Elsinor Avenue

IMPROVED PHENOLTETRACHLOR- PHTHALEIN TEST FOR LIVER FUNCTION

IN PREGNANCY AND ITS TOXEMIAS*

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AND

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BOSTON

Realizing the importance of an accurate measure of liver function in the diagnosis, prognosis and treatment of toxemias of pregnancy, many investigators have tried to devise tests by means of which the functional capacity of the liver can be estimated under normal and pathologic conditions

Various methods have been attempted. Examination of feces and urine for the presence or absence of stercobilin, bilirubin, urobilin and the biliary salts has its place and can be clinically applied to a certain degree. Determination of the glycolytic and glycolytic functions, the proteolytic function, the proteopexic hemoclasia crisis test of Widal, and the various blood examinations have all been utilized with varying results. Based on the fact that the liver has important excretory as well as secretory powers, several coloring matters have been used, chief among which is phenoltetrachlorphthalein.

Abel and Rowntree,¹ by means of pharmacologic studies, determined that phenoltetrachlorphthalein is excreted almost entirely by the liver, and that when injected intravenously it is not toxic. Rowntree, Hurwitz and Bloomfield,² and Whipple, Mason and Peigenthal³ later employed it as an indicator of liver function, by determining the amount present in the stools during the twenty-four hours following its injection. Legitimate criticisms of this method are that it is not only time consuming and disagreeable, but also not reliable, in that quantitative stool collections are frequently inaccurate indexes of the entire intestinal contents. Furthermore, the dye may be reabsorbed from the large intestine and reexcreted by the liver. Utilizing the Meltzer-Lyons duodenal tube method of bile drainage, Aaron, Beck and Schneider⁴ recently estimated the phenoltetrachlorphthalein elimination in the bile. Williams,⁵ using the same method, reports

the results of observation on a series of normal pregnant women, with fairly constant end reactions, and also several pathologic cases with variable results, in which liver damage might reasonably have been suspected. The latter method at best is uncomfortable to the patient and undoubtedly impossible to perform at times, particularly in cases in which there is pernicious vomiting, moreover, varying amounts of bile escape around the duodenal tube and pass down the intestine, making quantitative values uncertain.

Since it has been observed that the liver is practically the only organ involved in the elimination of phenoltetrachlorphthalein, and because the dye appears in the urine only when there is impaired output in the stools, Rosenthal⁶ concluded that, after the injection of the dye intravenously, there should be a retention in the blood if liver function is impaired. In a series of experiments on dogs he showed a definite retention of the dye in the blood of those animals in which liver destruction, as indicated by jaundice of the sclera, bile in the urine, and similar changes, had been produced by means of prolonged chloroform anesthesia. He later applied this improved test clinically, injecting the dye intravenously and withdrawing blood at varying intervals and determining the amount of dye present in the plasma. The same test has been used in this series of normal and toxic pregnancies, the procedure here described having been carried out.

The patient was weighed, and the amount of phenoltetrachlorphthalein to be injected was determined on the basis of 5 mg of dye for each kilogram of body weight. (One cubic centimeter of the standard product as manufactured by Hynson, Westcott & Dunning contains 50 mg of the disodium salt.)

The apparatus that was used consisted of A (Fig 1) a 30 cc syringe, B a 10 cc syringe, C₁, C₂, C₃, a three-way stopcock with attached tubing, small test tubes and E a flask containing warm physiologic sodium chlorid solution.

The required amount of dye having been drawn into syringe A, rubber tubing C₁ is attached and the dye diluted with warm physiologic sodium chlorid solution from flask E through tubing C, thus forcing the air from C. Tubing C₂ is then placed in the flask and C₃ removed. With the patient in the recumbent position and a suitable vein having been selected the part is prepared locally with alcohol and iodine, and from 4 to 5 cc of blood is withdrawn. The serum from this blood is to be used as the control. Leaving the needle in situ, the syringe is disconnected, the tubing C₂ attached and the diluted dye injected slowly into the vein, and at the end of the injection the time is noted. The small amount of dye remaining in the syringe and connections is then washed into the vein with approximately 50 cc of saline solution and the needle is withdrawn. By means of the smallest hypodermic needle attached to a clean 10 cc syringe, from 4 to 5 cc of blood is withdrawn from a vein in the opposite arm at intervals of fifteen minutes, one hour and two hours from the time of injection of the dye. (The opposite arm is used so as to avoid the possibility of contamination with any dye that might have escaped about the site of the initial injection.) The various specimens of blood, which have been collected in labeled test tubes, are allowed to cool for about an hour during which period the clot retracts.

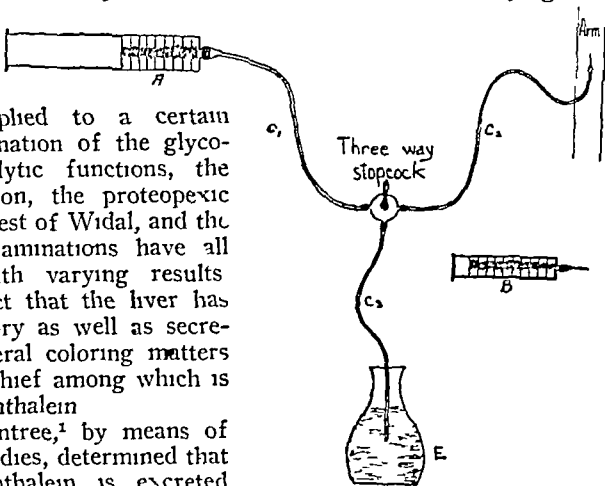


Fig 1—Apparatus

* Read before the Cosmopolitan Medical Club December 16 1922

From the Department of Gynecology and Obstetrics Boston City Hospital

1 Abel and Rowntree J Pharmacol. & Exper Therap. 1 233 1909
2 Rowntree Hurwitz and Bloomfield Bull Johns Hopkins Hosp 21 327 1913

3 Whipple Mason and Peigenthal Bull Johns Hopkins Hosp 24 207 1913

4 Aaron A H Beck E C and Schneider H C The Phenol tetrachlorphthalein Test for Liver Function J A M A 77 1631 (Nov 19) 1921

5 Williams P F Phenoltetrachlorphthalein Test for Liver Function in Pregnancy Am J Obst & Gynec 4 26 (July) 1922

6 Rosenthal S M An Improved Method for Using Phenoltetrachlorphthalein as a Liver Function Test J Pharmacol & Exper Therap 19 383 (June) 1922

7 Rosenthal S M A New Method for Using Phenoltetrachlorphthalein J A M A 77 1631 (Nov 19) 1921

They are then centrifuged at high speed, and the clear serums are removed to labeled tubes.

Standards for colorimetric comparisons are then prepared. According to Rosenthal, there would be an amount of dye in the blood stream comparable colorimetrically to 10 mg. of dye in 100 c.c. of water if there occurred no elimination after the injection of 5 mg. of dye for each kilogram of body weight. This, therefore, has been used to represent the 100 per cent standard. From this standard solution, 50 and 25 per cent dilutions are prepared, to each of which is added three drops of 5 per cent sodium hydroxide solution to bring out the full color. The normal standards for colorimetric comparisons are thus prepared.

0.4 c.c. of control serum + 0.1 c.c. of 50 per cent solution 10 per cent control
0.4 c.c. of control serum + 0.1 c.c. of 25 per cent solution 5 per cent control

In like manner, whenever indicated, standards of varying strengths are prepared. To 0.5 c.c. of each standard and to

We have applied this test to a series of pregnant women, both normal and toxic. It seems inadvisable to attempt in a paper of this scope to enter into full case history reports, so for the sake of brevity and for the ease of comparison, we shall attempt to classify and group the various cases according to their clinical pictures.

NORMAL PREGNANCIES

The group of normal pregnancies is composed of patients in the third trimester in whom there were no symptoms or clinical findings referable to any toxemia of pregnancy. We have included in this series one case of pregnancy complicated by asthma and another case complicated by pyelitis. In view of the fact that the normal curve for nonpregnant patients shows from 3 to 7 per cent of the dye present in the blood stream fifteen minutes after injection, and

TABLE 1—OBSERVATIONS IN NORMAL CASES OF PREGNANCY

Patient	Age	Pregnancy	Month	Blood Pressure	Urine	Date	Percentage of Dye in Serum			Comment
							15 Min	1 Hr	2 Hr	
1 C D	29	Seventh	5½	115/75	Negative	9/25/22	5	½	0	Normal clinical history normal curve
2 T D	30	Fourth	7	120/80	Negative	10/7/22	5	0	0	No toxic symptoms normal curve
3 L W	24	First	8½	110/75	Negative	11/25/22	5	0	0	Frequent asthmatic attacks otherwise normal pregnancy normal curve
4 C B	25	Second	7	120/70	Alb L T numer ous W B C clumps	11/19/22	5	½	0	Pyelitis + pregnancy normal curve
5 L C	18	First	8½	120/80	Negative	11/22/22	7	1	0	No toxic symptoms normal curve
6 A M	20	First	8	110/75	Negative	10/19/22	6	3	0	Normal clinical history slight delay in 1 hour

TABLE 2—OBSERVATIONS IN CASES OF NEUROTIC AND TOXIC VOMITING

Patient	Age	Pregnancy	Month	Blood Pressure	Urine	Date	Percentage of Dye in Serum			Comment
							15 Min	1 Hr	2 Hr	
7 L S	22	Second	2	110/74	Negative	11/20/22	7-8	1½	0	Neurotic type showing practically normal curve
8 E R	27	Third	3	90/70	Albumin S T acetone 0	9/26/22	9	½ 1	0	Essentially as above
9 B C	21	First	3	136/86	Albumin 0 acetone 0	11/7/22	11	7	2	Moderate impairment of liver function
10 H L (a)	20	First	5½	110/80	Albumin S P T acetone 0	10/17/22	10	4	1	Essentially as above
(b)				115/80	Negative	11/2/22	7	1	0	Normal curve following treatment
11 A S (a)	18	Second	3½	90/65	Albumin 0 diacetic + acetone S P T	11/13/22	7	9	3	Moderate impairment of liver function
(b)				110/85	Negative	11/22/22	6	1	0	Normal curve following treatment
12 A C	36	Fourth	2½	98/70	Albumin S T diacetic ++ acetone ++	9/5/22	12	12	5	Marked severe impairment of liver function
13 J C (a)	28	Third	2½	110/70	Albumin V S T acetone and diacetic F P T	10/12/22	4	3	0	Slight impairment of liver function
(b)				110/70	Acetone and diacetic S P T	10/17/22	9	4	0	Moderate impairment of function
(c)				105/68	Diacetic + acetone +	11/2/22	7	3		Slight improvement clinical picture improved
(d)				98/65	Albumin S P T diacetic ++++ acetone ++++	11/9/22	12	9	7	Very marked impairment of liver function
(e)				94/65	Acetone ++ diacetic ++	11/15/22	13	14	10	Severe impairment (dangerously ill)
(f)				100/70	Albumin S P T acetone 0 diacetic 0	11/22/22	9	4	½	Marked improvement of liver function (clinical picture improving)
(g)				108/75	Negative	12/10/22	4	½	0	Normal curve following subsidence of symptoms

each of the serums mentioned, three drops of 5 per cent sodium hydroxide solution is added. The percentage of the dye present in the blood at the various intervals is then determined by colorimetric comparison of the various serums with the standards.

After applying this test to a series of patients in whom no hepatic derangement was demonstrable clinically, Rosenthal determined that a normally functioning liver will remove from the blood stream all but from 3 to 7 per cent of the dye in fifteen minutes after injection and that, in one hour, removal of the dye is complete. On further application of this test, he obtained results which proved definite retention of the dye in persons with obvious liver damage, as indicated clinically as well as by postmortem findings.

0 per cent at the end of one hour, Table 1 shows that practically all of our so-called normal cases of pregnancy fall within these limits.

These results although few in number, suggest that the so-called "liver of pregnancy" with its various physiologic changes shows no actual impairment of function as evidenced by this test, and that the normal curve for nonpregnant cases may also be used to represent the normal curve during pregnancy. Conclusions to this effect, however, must await similar results in a large series of cases.

NEUROTIC AND TOXIC VOMITING

Under the heading of neurotic and toxic vomiting are grouped the cases in which vomiting has been the

predominant symptom. Several of these patients have shown such definite changes in their degree of liver function impairment, coinciding with the clinical manifestations, that it seems advisable to discuss them separately.

CASE 7—L S., at the fifth week of pregnancy, had a four day period of excessive vomiting, which ceased on the day of admission. She was discharged well, no vomiting had occurred four days later. The test curve was virtually within normal limits.

CASE 8—E R. began vomiting when five weeks pregnant, and continued for twenty days, with associated headaches. Vomiting ceased after two days of starvation treatment. The test on the day of entrance showed a slight increase in fifteen minutes, but a normal level in one hour.

CASE 9—B C. was four months pregnant, and had vomited somewhat excessively for the last three months, associated with frequent headaches and dizzy spells. There was no appreciable loss of weight, and the general condition appeared fair. The test showed an elevated curve suggesting impairment of liver function. The patient refused admission to the hospital, and could not be followed further.

CASE 10—H L., when two months pregnant, was treated in the Homeopathic Hospital for excessive vomiting. She was discharged well after nine days. She entered Boston City Hospital when five and a half or six months pregnant with a history of excessive vomiting for two weeks prior to entrance, and vomitus containing blood streaks for the last two days. The vomiting ceased after four days of treatment. The test on entrance showed a moderate impairment of hepatic function (10 a).

The patient returned for another test, feeling well, with no vomiting for three weeks. The test curve was within normal limits (10 b).

CASE 11—A S., admitted, November 12, about three and one-half months pregnant, with a history of severe headaches, blurring of vision, and excessive vomiting for twelve days, was unable to retain anything by mouth. The general condition was fair, the face, drawn, the tongue, moist, pulse, 94. The test on entrance (11 a) showed definite impairment of liver function.

The patient improved rapidly under treatment, vomiting ceased and she was ready for discharge, November 22, when the test curve (11 b) showed evidence of a normally functioning liver. The patient was seen again three weeks later, feeling perfectly well.

CASE 12—A C., admitted September 1, had had her last period, June 15. There had been pernicious vomiting for five weeks prior to admission. Therapeutic abortion was performed at home four days prior to entrance, but vomiting persisted.

A test, September 5, showed evidence of severe liver function impairment.

September 6 vomiting became aggravated, and the sclerae showed a faint tinge of jaundice. Dilation and curettage was performed, with liberation of a small amount of placental tissue, but the patient died shortly afterward.

CASE 13—J C., admitted, Oct. 12, 1922, had had her last period, August 6. She had vomited considerably for the last two weeks, especially during the last three days. The general condition was good, the pulse, 84.

A test on entrance showed slight delay in the one hour specimen (Curve I, Fig 2).

October 17, the patient was somewhat worse than on entrance, she vomited considerably. She was given rectal feedings almost exclusively. A test indicated moderate functional impairment (Curve B).

November 2, definite improvement was recorded. There was very little vomiting. The patient had been out of bed for the last few days. The test curve was somewhat lower than the previous one, indicating some improvement (Curve C).

November 9, it was noted that for the last five days the patient had rapidly become more toxic, vomiting very frequently. The pulse varied from 100 to 104. The test curve was much elevated over previous curves, suggesting marked liver function impairment (Curve D).

November 11, there was jaundice of the sclera, which became somewhat more marked, November 14. The patient was much worse, very irritable and apprehensive. There was evidence of a definite toxic psychosis. She was placed on the dangerous list. The pulse ranged from 116 to 120. The systolic blood pressure was 96 the diastolic 60. The test indicated severe impairment of liver function (Curve E).

By November 22 marked improvement had taken place. The patient was rational and felt well. She was placed on the full house diet. There was no vomiting. The test curve had dropped markedly, showing marked improvement of liver function (Curve F).

The patient was discharged from the hospital, November 28, and had felt very well since then. The test curve December 10, was normal (Curve G).

Study of Table 2 and the accompanying case reports suggests that in cases of toxic vomiting there is a very definite relation between the degree of toxicity of the patient, as evidenced by the clinical picture, and the degree of functional impairment of the liver, as evidenced by

this test. This is clearly demonstrated in Case 13, in which there occurred several fluctuations in the degree of toxicity, with corresponding variations in the test curves.

In one instance the test showed functional impairment somewhat more severe than the accompanying clinical picture would indicate. This, however, was followed in a few days by definite jaundice, toxic psychosis and, in general, a markedly aggravated picture. The question, therefore, arises as to whether it may not be possible by means of this test to anticipate the clinical picture and to institute proper therapeutic measures at an earlier period. The question also arises as to whether considerable aid might not be obtained in differentiating the neurotic type from toxic cases by means of this test as we have found that in the few cases studied in which the outcome and the general course of the clinical picture warranted the former diagnosis, the functional capacity of the liver was little, if at all, impaired.

HYPERTENSION GROUP

Cases of hypertension, in several of which apparently there were frank renal pathologic changes as a basis, are included in this group with preeclamptic and

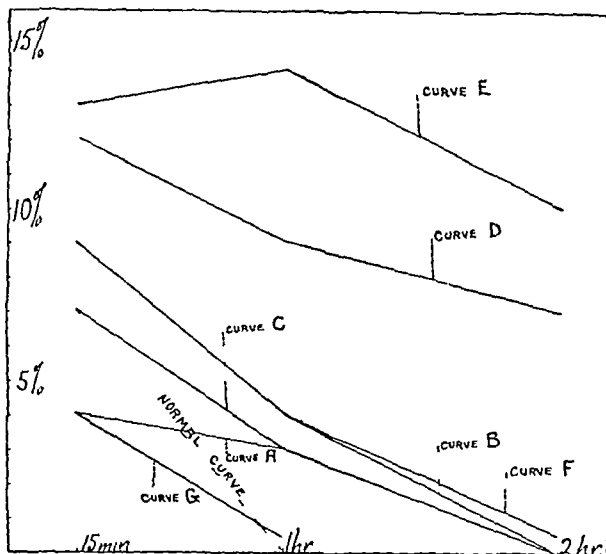


Fig 2—Test curves throughout clinical course in Case 13

eclamptic cases The majority of the cases are pre-eclamptic, in which relief of symptoms occurred following treatment or delivery

CASES 14 and 15—Both patients were from six to seven months pregnant, and their blood pressures ranged from 130 to 150, systolic, and from 90 to 100, diastolic There was occasional slight blurring of vision with no other toxic symptoms Tests in each case showed very slight impairment of function

CASE 16—A F was followed in the outpatient department of the Boston Lying-In Hospital, where she was treated for hypertension The blood pressure ranged between 140 and 180, and she experienced occasional headache and blurring of vision She was referred to the house because of hypertension Examination of the urine revealed a trace of albumin Test *a*, prior to delivery, showed evidence of definite impairment of liver function Test *b*, taken one week after delivery, was within normal limits The blood pressure has been normal since delivery (130 systolic, 90 diastolic)

CASE 17—R C was treated in the outpatient department for hypertension for the last six weeks There had been

hospitalization Blood pressures taken at frequent intervals varied from 128 to 150

December 11, the systolic blood pressure varied from 140 to 160, and the diastolic from 96 to 106 There was definite accentuation of symptoms The patient was delivered of a living baby by means of low forceps

December 24, the patient felt perfectly well The blood pressure had ranged from 116 to 120 for the last ten days The test curve was within normal limits

CASE 19—L K, admitted, November 22, had had occasional nausea There had been slight edema of the lower extremities for several months There were occasional bright spots before the eyes The blood pressure for a few months had been around 130 and 136 systolic

A test done November 19 showed slight impairment of function The patient entered the hospital six days later, November 25 Convalescence was uneventful except that the blood pressure remained somewhat elevated

Dec 5, 1922, the test curve was normal

CASE 20—J M was admitted, Nov 23 1922, in a comatose condition with a history of having had one convulsion A negative history was obtained from the family with exception

TABLE 3—OBSERVATIONS IN HYPERTENSION GROUP

Patient	Age	Preg nancy	Month	Blood Pressure	Urine	Percentage of Dye in Serum				Comment
						Date	15 Min	1 Hr	2 Hr	
14 I J	22	Third	7	138/90 to 150/90	Albumin S T acetone 0	11/23/22	8	2	F P T	Very slight impairment of liver function
15 M G	20	First	6½	130/70 to 150/100	Albumin S P T	11/20/22	7	2	0	Very slight impairment
16 A F (a)	31	Fourth	9	155/100	Albumin T	11/ 7/22	10	5		Moderate impairment of liver function
(b)				130/90	Negative	11/15/22	5	½		Normal curve following delivery
17 R C (a)	39	Sixth	7	150/90	Albumin L T	11/13/22	10	5	½ 1	Moderate impairment
(b)				130/70	Negative	11/23/22	7	1	0	Normal curve following delivery
18 T W (a)	18	First	8	150/100	Albumin T	11/15/22	12	4	2	Moderate impairment of liver function
(b)				144/95	Albumin T	11/22/22	12	6-7	2 3	Impairment slightly more marked
(c)				145/95	Albumin T	12/ 5/22	14	6	2	About the same as above
(d)				120/80	Negative	12/24/22	7	0	0	Normal curve following delivery
19 L K (a)	28	Fourth	9	134/80 to 150/90	Albumin T	11/19/22	7	5	1	Moderate impairment
(b)				135/80	Albumin S T	12/ 5/22	6	0	0	Normal curve following treatment
20 J M (a)	32	First	9	170/105	Albumin L T casts +++	11/23/22	16	14	6?	Very marked impairment of liver function
(b)				160/105	Albumin L T casts +++	11/26/22	11	5	1	Impairment much less severe
21 M B	24	Third	9	210/120	Albumin L T casts +++	11/16/22	15	9	5	Very marked impairment
22. A M (a)	19	First	9	150/96	Albumin L T casts 0	11/28/22	11	7	5	Marked impairment of liver function
(b)				128/100	Albumin L T casts +	12/ 2/22	9	9	7	Impairment more marked (patient having convulsions)
(c)				118/70	Negative	12/14/22	9	½	0	Practically normal curve following delivery

edema of the ankles for the last two months but no headaches or visual disturbances There had been epigastric pains and edema of the hands for the last two weeks The patient was referred to the house The systolic blood pressure was 150 diastolic 90 Urine examination disclosed a large trace of albumin

Test *a* showed definite evidence of impaired function Precipitate premature delivery occurred the following day, and the blood pressure remained about 130 systolic and 70 diastolic for the following week Test *b* taken nine days post-partum showed a normal curve

CASE 18—T W entered the hospital, Nov 15 1922, at about the end of the eighth month of pregnancy, with a history of moderate nausea and occasional vomiting and dizziness during the last month The systolic blood pressure on entrance was 150, diastolic 100 A large trace of albumin was present in the urine There were no casts There was moderate edema of the ankles

The test showed moderately severe impairment of liver function

Definite improvement in the general condition occurred during the week ending November 22 with relief of symptoms to such a degree as to warrant discharge to the outpatient department The test done preliminary to discharge however showed liver function impairment as severe as at entrance The blood pressure again was elevated The patient was advised to remain in the hospital

December 5 the test showed results quite similar to previous curves The clinical picture in general warranted

of moderate edema of several months' duration The patient apparently was at term The fetus was apparently dead in utero It was said that the patient had been in labor for the last thirty-six hours The cervix, however, was not dilated A bag was employed, and eliminative measures were instituted The test showed severe liver function impairment The patient was delivered of a dead fetus partially macerated

November 24 the general condition was much improved

November 26 the patient's general condition was very poor There were evidences of nephritic involvement of a severe degree The blood pressure was high, edema was increasing The patient evidently was dangerously ill

The test curve showed much improvement of liver function, although clinically the patient was dying of nephritis This suggests that there is a possibility that this test may become of value in differentiating between nephritis and eclampsia

CASE 21—M B was admitted, Nov 16 1922, with a history of having felt perfectly well up to about ten days before, when she began to have abdominal pain frequent micturition, and moderate edema of the ankles She had had headache for the last two days, and increasing edema and slight nausea and vomiting on the day of admission The blood pressure was from 210 to 220 The patient was at term, the fetus was apparently dead in utero Eliminative measures were instituted

The test showed marked functional impairment

The patient gradually became more confused and mentally torpid and had severe convulsions in rapid succession She was delivered of a dead fetus Cardiac embarrassment and

pulmonary edema intervened, and the patient died on the following day

CASE 22—A M., who was about at term, entered the hospital Nov 28, 1922, with a history of edema of the legs for the last two weeks. She had felt very well throughout pregnancy. The blood pressure was 154 systolic and 96 diastolic. Examination of the urine disclosed a large trace of albumin. There were no casts.

The test showed marked impairment of function, suggesting greater toxicity than the clinical picture indicated.

By December 2 there was marked improvement of the clinical picture. Edema was almost gone. The systolic blood pressure ranged from 128 to 136, and the diastolic from 76 to 84. The urine was almost free of albumin. The patient had been feeling very well until suddenly, on the morning of December 2 after feeling slightly confused, she had a convulsion. Rigorous treatment was instituted, a bag was employed, and the patient was delivered later by low forceps of a living baby.

The test was done between convulsions, and injection of the dye was followed with 500 cc of intravenous saline solution after venesection which undoubtedly diluted the dye somewhat, but still the test curve showed marked impairment of function.

December 14, excellent convalescence had occurred. The test curve was within normal limits.

Table 3, with the accompanying test curves and case reports, indicates that there has been liver function impairment in every case in which there has been sufficient clinical evidence to warrant a diagnosis of preeclampsia or eclampsia. Whenever the clinical picture showed a considerable degree of toxicity, curves have been obtained which indicate corresponding degrees of impairment of liver function. In several instances, however, the test has indicated degrees of toxicity more severe than the corresponding clinical picture suggested (Cases 18 and 22). Further developments in these cases, however, showed definite accentuation of clinical symptoms suggesting that the test curve preceded the clinical picture in evidencing toxicity.

Hourly blood pressure determinations in cases of preeclamptic toxemia have shown variations at various intervals, fluctuating from considerable degrees of hypertension to approximately normal levels within short periods of time, in cases in which the test curve has consistently shown definite impairment and in which subsequent developments proved definite marked toxicity. This suggests that greater reliance might be placed on this test than on blood pressure determinations or other variable clinical symptoms. Whenever, in cases of toxemia, the patients have been relieved from symptoms, either by treatment or by delivery, the test curves have fallen to normal limits, showing rapid return to normal liver function. The time required in these cases apparently varies directly with the degree of liver impairment.

COMPOSITE CURVES

Figure 3 is composed of composite curves which have been compiled from readings obtained in the entire series of cases.

Curve A^2 represents our normal curve, and is based on results obtained from our series of normal pregnancies. This curve is seen to coincide, for all practical purposes, with Curve A^1 , the normal curve for normal nonpregnant cases.

Curve B^1 is based on tests in so-called toxic vomiting cases, all cases in this series in which vomiting was a predominant symptom.

Curve B^2 is based on the same cases as B^1 after the patients were clinically relieved.

Curve C^1 is based on results obtained in cases in which hypertension was a predominant symptom. The majority of these cases were of preeclampsia and eclampsia.

Curve C^2 is based on the same cases as C^1 , following relief of symptoms subsequent to treatment or delivery.

Figure 3 demonstrates graphically that toxic cases of pregnancy show definite liver function impairment and that subsequent to relief from the toxic symptoms there is return of liver function to normal limits.

SUMMARY

The phenoltetrachlorophthalein test, as described in the foregoing, has been used to measure liver function both in normal and in toxic cases of pregnancy.

Normal cases of pregnancy show a curve coinciding with that of normal nonpregnant cases, suggesting that the so-called "liver of pregnancy" with its various physiologic changes shows no actual impairment of function.

Toxemias of pregnancy, including eclampsia, show a definite relation between the degree of liver impairment,

as measured by this test, and the degree of toxicity, as evidenced by the clinical picture.

Results obtained in several cases suggest that this test is a more accurate index of existent toxicity than variable clinical symptoms are, and that it may be possible by means of this test to anticipate the clinical picture in forming an opinion as to the degree of toxicity existent at a given time.

Toxemias of pregnancy, including eclampsia, show definite liver impairment, and subsequent to relief from toxic symptoms there is a return of liver function to normal limits.

We believe that this test gives a quantitative index of functional capacity of the liver, and that in the toxemias of pregnancy it will aid greatly in serving as an index of treatment and will assist in determining the time at which therapeutic abortion or induction of labor should be performed in cases in which these measures may become necessary.

Mysticism.—We must, after all, come to terms in some way with the emotions underlying mysticism. They are very dear to us and scientific knowledge will never form an adequate substitute for them. No one need fear that the supply of mystery will ever give out, but a great deal depends on our taste in mystery, that certainly needs refining.—Robinson, *The Mind in the Making*.

THE INTRACUTANEOUS GUINEA-PIG TEST (KELLOGG)

FOR HUMAN SUSCEPTIBILITY AND IMMUNITY
TO DIPHTHERIA

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Since the publication of an article¹ describing a new test for the determination of immunity and susceptibility to diphtheria, opportunity has been afforded to check this method against the Schick test under a variety of conditions, and this experience with nearly 200 comparative tests prompts the offering of a second paper on the subject.

Some of the results of parallel tests, and the conclusions reached, more properly form material for a discussion of the Schick test, because they pertain chiefly to experiences in the practical application of the latter. These observations will, therefore, be left for discussion elsewhere. The Kellogg test, for so it has come to be known for want of any other short appellation, is, briefly, the injection into the skin of a white guinea-pig of a mixture of equal parts of blood serum from the person tested and a toxin dilution containing one fortieth of the L + dose per cubic centimeter. If the patient's serum contains exactly $\frac{1}{30}$ unit of antitoxin per each cubic centimeter (the amount stated by Schick as being protective), 0.1 c.c. will contain $\frac{1}{300}$ unit of antitoxin. Two-tenths cubic centimeter of the mixture of serum and toxin will, therefore, contain $\frac{1}{300}$ unit of antitoxin and $\frac{1}{300}$ L + dose of toxin.

The combining ratio of these substances is such that there will be free in the mixture $\frac{1}{300}$ minimal lethal dose of toxin, which is just sufficient to produce redness without necrosis in the skin of the guinea-pig. This degree of reaction, as also anything less, constitutes a negative result and indicates immunity.

If necrosis appears, there is less than $\frac{1}{30}$ unit of antitoxin per cubic centimeter in the serum, and the subject is not immune. However, serum frequently contains antitoxin in quantities insufficient to give a negative Schick reaction or to afford protection, yet these minute quantities modify somewhat the intensity of the positive reaction on the guinea-pig. Experience with these varying degrees of positiveness, when produced with known amounts of antitoxin, enables us to judge roughly the amount of antitoxin present in routine tests. No experience is needed, however, to decide between cases that have $\frac{1}{30}$ unit or more of antitoxin (negative) and those that have markedly less than $\frac{1}{30}$ (positive) for the reason that the criterion is the presence or absence of a breaking down of the epithelial layer with blackening. This is observed frequently on the second day, but sometimes not till the third day, over the central portion of the red area. This red area develops in a few hours in all tests except in those with serum containing $\frac{1}{20}$ unit or more of antitoxin per cubic centimeter, in which case no reaction results. When no antitoxin or only traces are present, there is usually observed a small dead white spot in the center of a red area at the end of twenty-four hours. This means commencing necrosis, and the outcome (a positive reaction) is now a foregone conclusion, and may be so reported. A little more antitoxin may prevent this early blanching, and in this event we may be unable to determine the reading until the second day. Occasionally it is necessary to wait until the third day for the development of necrosis, but not often. The progress of the positive reaction is characterized by this sequence of events.

An area, bright red, and from 15 to 20 mm in diameter, forms within a few hours. In twenty-four hours, there is usually observed a central white spot which is premonitory of necrosis. In from forty-eight to seventy-two hours the area of the central white spot has enlarged and commenced to brown in the center, leaving a margin of white necrotic epithelium as a border beyond which the red zone extends. This brownish area shows a breaking down of the superficial layers of the skin with slight serous exudation, rapidly drying to form the brown and later black scab. A second white ring is common and is quite characteristic, giving the so-called target appearance. In from seventy-two to ninety-six hours the brown area has become black. This black spot is a scab which is detached in a few days. Milder degrees of necrosis are seen, but no difficulty is experienced in deciding the question if the decision is deferred to the third or fourth day, as even slight necrosis will by this time have resulted in a scab which is unmistakable even though not as black as in the total absence of antitoxin. When the reaction is definite and bright red at the end of twenty-four hours, but progresses no further, showing signs of regression in forty-eight hours, the amount of antitoxin present in the patient's serum is very close to $\frac{1}{30}$ unit per cubic centimeter. The guinea-pig is never sensitized to the proteins of diphtheria toxin, consequently, pseudoreactions never occur. One half of the reactions can be read definitely in twenty-four hours. Most of the remainder are conclusive in another twenty-four hours. A very few have to wait seventy-two hours for final reading.

In practice we have found that the skin reaction is qualitative rather than quantitative, and that 0.1 c.c. gives exactly the same type of reaction as 0.2 c.c., except that it is smaller in area. Our routine method now is to draw into the syringe $\frac{3}{20}$ c.c. of the serum-toxin mixture, which allows for some loss in injecting, and still gives us 0.1 c.c. in the skin.

While the injection is made intracutaneously, as in the Schick test, the consequences of unskilful technic in making the injection are not as serious as in the latter test. It is impossible to bury the reaction by too deep an injection, because the amount of toxin present in a mixture giving rise to a positive reaction is from four to ten times as much as is injected in the Schick test. According to Park,² in several hundred Schick tests applied to both arms, 2 per cent showed the reaction on only one arm, the explanation presumably being that in the failures the injection was placed too deeply.

Blood specimens may be sent by mail to laboratories performing the test, as the antitoxin content of the serum is very stable. Only 0.1 or, at most, 0.2 c.c. of serum is required, so that 0.5 c.c. of blood is all that need be collected. This amount can easily be obtained by pricking the lobe of the ear with a needle or small lance, but many will prefer to take the blood from a vein with a hypodermic syringe.

The toxin is conveniently kept ready for quick and accurate dilution by adding pure neutral glycerin to

¹ Kellogg, W. H. A Test for Diphtheria Immunity and Susceptibility. J. A. M. A. 75: 1584 (Nov. 10) 1922.

² Park, W. H. Toxin-Antitoxin Immunization Against Diphtheria. J. A. M. A. 79: 1584 (Nov. 4) 1922.

make the volume of the L + dose exactly 1 c c Five-tenths cubic centimeter of this glycerinated toxin is added to 14.5 c c of sterile physiologic sodium chlorid solution This gives a strength of $\frac{1}{30}$ L + dose to 1 c c

In the laboratory, the specimens of blood are centrifuged, and 0.1 or 0.2 c c of the clear serum is placed in a 2 c c shell vial An equal quantity of the toxin dilution is now added to the serum in the shell vial, a 1 c c record or Luer syringe being used preferably for measuring both serum and toxin The same syringe may be used for measuring several serums if it is washed out several times with salt solution after each use It is necessary, before drawing up serum or toxin, to expel carefully all liquid left in the lumen of the needle, for if this is not done it will be drawn up into the fluid being measured, thus altering the strength The vials are agitated sufficiently to insure thorough admixture of their contents, and allowed to stand at room temperature for half an hour

During this wait, the guinea-pigs, which must be white, are prepared by plucking the long hair from an area on one or both sides, and then shaving to give a clean surface The process of plucking does not seem to inconvenience the pigs any more than the shaving, and the method is to be preferred to that of using depilatory pastes

If the toxin is fairly low in the number of minimal lethal doses to the L + dose, six tests may be placed on one pig, three on a side, without fear of killing the animal by an overdose of toxin, should all the tests be positive The toxin we are using at present has twenty-five minimal lethal doses in the L + dose, consequently, the most toxin that can be present in a single positive test is one-twelfth minimal lethal dose, or a total of half a minimal lethal dose in six inoculations ($25 - 300 = 1/12$) Guinea-pigs should not be used a second time for this work on account of the possible development of an immunity The injection is made intracutaneously with a 26 gage needle, the same as for the Schick test

Concerning the maintenance of a potent toxin by laboratories using this test, it may be said that, notwithstanding the liability of toxin to deterioration, the difficulties from this source, contrary to what obtains in the Schick test, are negligible In the first place, a fall in the minimal lethal dose value will have no effect on the guinea-pig test so long as the L + value has not materially changed Fortunately, the nature of toxin is such that the L + or neutralizing value falls very much more slowly than its toxic quality, in fact, barring accidents, hardly at all in periods of several months, in a well "ripened" toxin

The affinity of antitoxin for toxin is so great that one unit neutralizes many minimal lethal doses (according to the number in the L + dose), and it follows that the amount of toxin (measured on the L + basis) may be considerably diminished in the test without greatly diminishing the amount of antitoxin necessary to give a negative reaction If the toxin used should have deteriorated, unknown to the technician, say 10 per cent in its L + value, $\frac{1}{33}$ unit of antitoxin in the serum tested will give the same reaction as $\frac{1}{30}$ unit with full strength toxin If a fall of 20 per cent (which, it is safe to say, need never be expected) should have occurred since the last standardization, $\frac{1}{40}$ unit will give the same reaction Conversely, a test serum containing 10 per cent less than the $\frac{1}{10}$ unit required for protection will permit a reaction that will be quickly noted, while 20 per cent less will permit a definitely positive reaction, owing to the increased

amount of toxin remaining free These facts explain the great sharpness of reaction and the greater sensitivity of this test over the Schick

It is a simple matter to check up the strength of a toxin by making a series of dilutions, each one of which contains one-thirtieth of a possible or tentative L + dose per cubic centimeter, the dilutions varying from one another in strength by one one-hundredth of the original L + value of the toxin Thus, if the last known value of the toxin was 1 c c to the L + dose, one solution is made which will represent 1 c c of the toxin to 30 of physiologic sodium chlorid solution, the next stronger will contain 1.01 c c, and so on, increasing by 0.01 c c till four or five dilutions have been made

After the dilutions have been prepared, 0.2 c c of each is placed in tubes or shell vials, and to each is added the same amount of antitoxin solution of such a strength that 1 c c equals $\frac{1}{30}$ unit Two-tenths cubic centimeter is injected intracutaneously, as previously described The amount of toxin used in the strongest dilution failing to produce necrosis in seventy-two hours is the true L + dose

The toxic quality of a toxin (on which the Schick test but not the Kellogg test depends) falls extremely rapidly under certain conditions (temperature, light, age, and the like) so that hundreds and perhaps thousands of Schick tests are performed with damaged toxin,

SUMMARY OF COMPARATIVE RESULTS

Kellogg	Schick	Number
Positive	Negative	1
Positive	Neg. pseudo	2
Negative	Positive	1
Negative	Combined pos.	7
Same with the two tests		149
Total		160

and frequently the false negatives received with such a toxin are not recognized by the operator because he has no check or control against a poor toxin It may be said that he should be on his guard for such an eventuality, and have his suspicions aroused by too high a percentage of negatives, but he has no such check when applying a few tests at a time The fact remains that he does not always recognize the difficulty, even when testing large groups

The accompanying table shows the results of tests applied in parallel with the Schick test on 160 persons, in four different groups, each group being tested at one time by the two methods Three of these groups were adults, one consisting of sixteen laboratory workers, one of public health nurses, twenty-three in all, and the other, of fifty-five medical students

The remaining group was composed of children in a school for the deaf and blind In this institution, 233 Schick tests were made, and all showing pseudoreactions were retested by guinea-pig inoculation The number retested was sixty-six which seems a high percentage of protein reactions but most of the children were young adolescents, very few being under 10 years of age

Among the miscellaneous specimens examined in addition to the 160 mentioned above, two were received with a history of the children having given positive Schick tests followed by a course of three injections of toxin-antitoxin mixture six months before Both of these bloods gave a positive reaction on the a-pig, which immediately raises the question of the potency of the toxin-antitoxin

With two exceptions, the Schick test and the Kellogg test in this entire series of 160 persons tested have agreed so far as uncomplicated Schick tests were concerned. The first of these exceptions was in a public health nurse who was tested by both methods, along with the other members of her group, twenty-three in all. She gave a clean-cut Schick positive, uncomplicated by protein reaction, and a negative Kellogg test. This result was so surprising that she was asked to return so that another sample of blood could be taken as a check against some such mistake as leaving the toxin out of the mixture. The second test was the same as the first, negative on the guinea-pig. Unfortunately, another Schick test was not done, and the subject is now out of reach.

There are two possible explanations for the conflicting results in this case. First, the patient may be sensitive to toxin (as a protein), giving a skin reaction to raw toxin, even though protected by an ample amount of natural antitoxin. The heated control remained negative for the reason that the toxin had been destroyed and the subject was not sensitive to the usual proteins of the toxin solution. This explanation presupposes that toxin is a true protein in chemical structure.

The other explanation is that the subject should have given a negative pseudoreaction with the Schick test, but, through a slip in technic (too deep an injection), no reaction followed the injection of heated toxin. Such a chance, previously referred to as having been reported by Park, is easily possible.

The second exception occurred in the group of medical students, and is probably an example of a false negative resulting from accidental misplacement of the injection in the Schick test.

The first test resulted in a negative Schick and a positive Kellogg reaction. In the second test, the Kellogg test remained the same, but the Schick test was positive, although not a very strong one. There was some transitory protein reaction in this case, but it is not included with the protein-sensitive group, for the reason that the explanation of the difference in the two tests at the first trial is not based on the existence of such sensitization.

Differences in results between the two tests, among protein-sensitive persons, were observed twice in the medical student group of fifty-five, both being read as negative pseudoreactions by the Schick test but giving positive reactions on the guinea-pig. These three false negatives give in this group an error for the Schick test of 5.45 per cent.

Among the sixty-six in the blind school given both tests, all of which were protein sensitive, the Schick results as finally interpreted after several inspections, and some changes of opinion, agreed with the guinea-pig readings in all excepting seven instances. These seven were recorded as combined positives by the Schick and as negative by the Kellogg test. There were, in addition, seven combined positives that were correctly read according to the other test.

That the guinea-pig method gives the true immune status of the subject will hardly be disputed by any one who attempts to solve the problem of what, besides antitoxin, can prevent a necrosing dose of toxin from producing that effect in the skin of a guinea-pig.

All tests were controlled by inoculating toxin mixed with salt solution instead of serum.

SUMMARY AND CONCLUSIONS

* 1 The test described is conclusive as showing either the presence or the absence of immunity to diphtheria.

2 Controls are possible which guard against deteriorated toxin and false negative reactions.

3 False negative reactions with the technic described are believed to be an impossibility.

4 Protein reactions do not occur.

5 The test is a central laboratory one, relieving the physician of the responsibility for the interpretation of the doubtful reactions so frequently observed in the Schick test.

6 The test is the one of choice for practitioners having occasion to test a few persons at a time. The disadvantage of the Schick test, under such circumstances, is that no control against false negatives from deteriorated toxin exists.

7 The test is not recommended as a substitute for the Schick test, when large groups are being examined, for the reason that the collection of a large number of blood specimens would be too time consuming, excepting with adults and older children with whom venipuncture can be used.

INFLUENCE OF ALCOHOL ON PROGNOSIS OF PNEUMONIA IN COOK COUNTY HOSPITAL

A STATISTICAL REPORT

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AND

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In this paper we propose to consider to what extent the use of alcohol affects the course of lobar pneumonia. The influence of alcohol on longevity has been the subject of extensive studies in recent years by the insurance companies. These companies do not, of course, accept persons who admit the excessive use of liquor, and their comparisons, therefore, are between abstainers and moderate users. Dr. Rogers of the New York Life shows that in several large companies the mortality runs 32 per cent higher in the group of moderate alcohol users than in the group of abstainers. The statistics of the Midwestern Mutual show that if abstainers are rated at 100 per cent, the mortality of moderate or occasional users of alcohol is 119 per cent, that of daily users of beer is 133 per cent, that of daily users of spirits is 166 per cent. The New England Mutual reports the startling comparison of 100 per cent in abstainers to 213 per cent in moderate users.

Carefully prepared and impressive as these figures are, we must make allowance for a certain error arising from the reluctance of the applicant for insurance to tell the whole truth concerning his habits. The abstainer has nothing to hide, but the user tends to minimize the amount that he drinks.

The physician in practice, on the other hand, enjoys the confidence of his patient and is able to obtain more reliable information on this matter. Our data are obtained exclusively from the histories of lobar pneumonia patients at the Cook County Hospital. We have studied the records covering eight years, six years before prohibition, 1911 to 1917, and two years after prohibition, 1921 to 1922. The intermediate years were purposely omitted on account of the streptococcus and influenza epidemics that produced atypical forms of pneumonia. It is a matter of common knowledge

that cases of classical lobar pneumonia were comparatively few until the year 1921

THE GROUPING OF CASES

We found it feasible to place in the first group the abstainers and those who used less than two glasses of beer daily, or who used spirits occasionally The

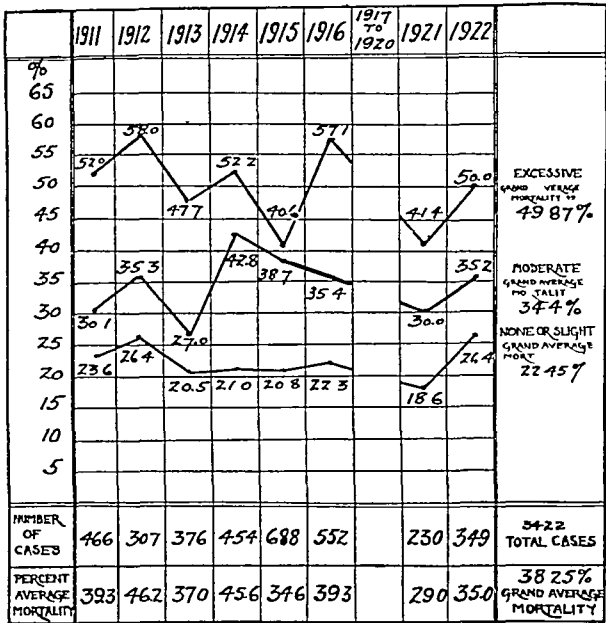


Chart 1—Yearly mortality in each group

second group included those who drank regularly two or more glasses of beer, or one or two glasses of spirits The third group embraced those who drank regularly a large amount of beer or spirits, or who became intoxicated at times Thus, it will be seen that our first group includes many persons who would be classified as moderate users by the insurance companies, and our third group is made up of men who, for the most part, would be ineligible for insurance because of their excesses

GENERAL AGE AVERAGE YEARLY IN EACH GROUP

	1911	1912	1913	1914	1915	1916	1917 to 1920	1921	1922	Grand Aver
None or slight	35.3	37.2	33.5	32.8	38.4	37.9	—	33.6	36.7	35.06
Moderate	40.4	39.3	40.2	42.0	41.1	41.1	—	38.4	40.9	40.46
Excessive	42.1	42.8	43.1	42.2	42.7	45.4	—	43.4	43.9	43.20
Average	39.2	38.1	38.9	39.0	40.7	41.5	—	38.4	40.5	39.57

In our compilation we excluded all cases in which a clear statement was not recorded concerning alcoholic habits A majority of such patients were brought to the hospital in such a toxic or moribund condition that no intelligent answers could be obtained The proportion of alcoholics among these patients was undoubtedly very high, and their mortality more than 56 per cent So we may be sure that the elimination of these patients who gave no definite information concerning their habits has reduced the actual mortality incidence of the third group of excessive drinkers

Only male patients have been tabulated, and none were recorded under the age of 18 This comprises 3,422 cases of lobar pneumonia, 884 of which were in the first group, 1,095 in the second group, and 1,443 in

the third group Chart 1 gives the mortality rate of the three groups in each of the eight years The grand average for all the years of the first group of abstainers and light users is 22.45 per cent, the average of moderate users is 34.4 per cent, the average of excessive users is 49.87 per cent

A natural objection may be raised to accepting these figures at face value on the ground that excessive users are likely to be older than the moderate or light users and that this difference in age may explain the increased death rate

We found the average age of the first group about 35 years, of the second group of moderate drinkers, about 40 years, and of the excessive group, about 43 years

Chart 2 has been constructed with a view to showing the death rate by decades in each group For example, one sees that in the period between 18 to 29 the mortality percentage of the first group was 13.6, as compared with 18.1 per cent in moderate, and 28.6 per cent in excessive users In the decade 30 to 39, the percentages were 18.4, 29.1 and 42.5, in the decade 40 to 49, 24.6, 38.6 and 50.9, in the decade 50 to 59, 40.2, 51.8 and 62.7, over 60 years, 49.3, 57.7 and 68.4

We may assume that in this comparison the age factor is entirely eliminated, as we compare the death rate of the three groups only at similar ages

Not only does the use of alcohol increase the death rate, but the increase maintains a remarkably constant ratio to the amount of liquor consumed

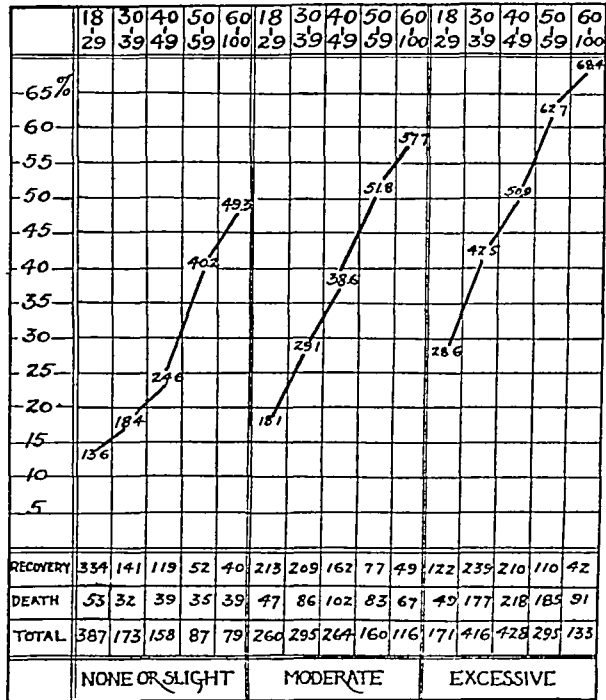


Chart 2—Mortality by decades in each group

It is interesting to observe there are 1,095 cases in the moderate group and 1,443 cases in the excessive group, a total of 2,538, with a mortality of 1,105 The mortality, calculated on the basis of the figures obtained for the group of abstainers or light users, is 22.45 per cent In other words, 4.6 per cent in the moderate group and 6.8 per cent in the excessive group may be attributed to the use of alcohol

DECREASE IN THE USE OF ALCOHOL

Do these data prove that prohibition legislation is lessening the death rate of pneumonia? They do not. They demonstrate only what a harmful effect the use of alcohol has on the course of the disease. They do not tell us whether legislation has or has not diminished the prevalence of drinking.

There are some interesting facts, however, that have a bearing on the results of legislation.

In the six years antedating the enforcement of the eighteenth amendment, only 21.6 per cent of all the pneumonia patients were in the first group of abstainers or light users, whereas, in the two postamendment years, the number arose to 39 per cent. Similarly, in the preprohibition years, the excessive users constituted 46.8 per cent of the whole number, while in the post-prohibition years they had fallen to 23 per cent. It was noted also that the amount of alcohol consumed by the persons in this group in recent years was far less than formerly. The tendency to drink less was already in evidence in the years 1915 and 1916, for reasons not explained.

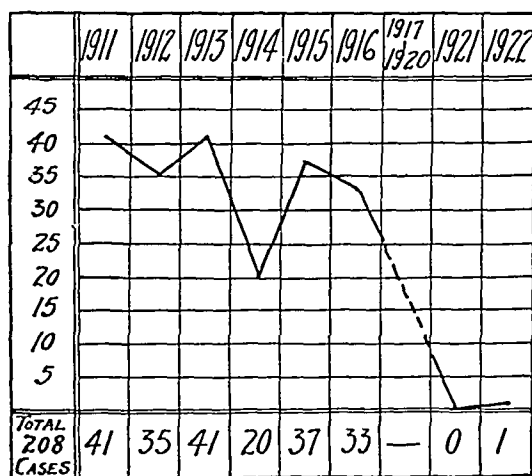


Chart 3—Incidence of delirium tremens

Another striking bit of evidence that the use of alcohol is greatly on the decrease, at least among the poor, is the record of delirium tremens. Chart 3 shows a yearly incidence of from twenty to forty-three cases of delirium tremens developing during the course of pneumonia in the preprohibition years, while in 1921 and 1922 together only one case occurred.

SUMMARY

1 To determine what influence the use of alcohol might have on the death rate, 3,422 cases of lobar pneumonia occurring during eight years at the Cook County Hospital were studied. It was found that the mortality was considerably higher in moderate users than in light users or abstainers and that the mortality in excessive users was much higher than in moderate users.

2 The average age of the moderate group was about five years greater than that of the abstainers or light users and the average age of the excessive group was three years more than the moderate. The maximum range between the first and third group was eight years. This would therefore explain a certain increase of mortality in the second and third groups over that in the first group.

3 To eliminate the age factor entirely from the problem, the mortality rate was reckoned separately in each group by decades. A comparison of the death rate in the same decades of the three groups shows a remarkable increase of the moderate users over the light users or abstainers, and a still greater increase of the excessive users over the moderate. Taking, for example, the decade 30 to 39 years, embracing the largest number of patients, we find the mortality in the abstainer or light user group 18.4 per cent, in the moderate user, 29.1 per cent, and in the excessive user, 42.5 per cent, from which we conclude that alcohol, in proportion to the amount consumed, increases the chances of death in pneumonia.

4 It is impossible to calculate the effect of legislative prohibition, but we do see in recent years an increase in the proportion of abstainers or light users, and a corresponding decrease in the number of excessive drinkers. The practical disappearance of delirium tremens in recent years, as compared with its frequency before prohibition, also bears testimony to a lowered rate of alcohol consumption.

5 It may be properly concluded that if all these patients had been restricted to abstinence or to the light usage of alcohol, 439 patients who died would have been saved.

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SECONDARY OS CALCIS*

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This case is reported because it appears to be the first case in the literature in which this accessory bone was implicated in a traumatism of the foot.

REPORT OF CASE

J. J. Mc, aged 30, an electrician, sprained his right ankle in April, 1921. I saw him three months later, at which time he was still complaining of pain and disability in the right foot. He localized the pain on the dorsum, in front of the external malleolus. He stated that occasionally a swelling appeared in this situation after use.

He walked with a slight limp. There was considerable tenderness on the dorsum in front of the external malleolus. Occasionally a crepitus could be elicited in the anterior subastragaloid region. The mobility of the subastragaloid region was moderately restricted.

A roentgenogram in the lateral view showed what at this time was interpreted as being a fracture through the processus anterior calcanei with avulsion of the distal fragment. The roentgenographic appearance of the left foot was not peculiar.

During the ensuing year, I saw the patient several times. He had had several recurring sprains with periods of disability. The findings on each examination were substantially as outlined above.

At this time I arrived at the conclusion that, instead of a fracture the loose bone shown in the roentgenogram was a secondary os calcis which had become loosened in its situation and which predisposed this region of the foot to recurring sprains by reason of its instability.

Aug. 15, 1922, I operated on this foot at the Hospital for the Ruptured and Crippled. The dissection was begun at the outer border of the calcaneocuboid joint. At about the middle of the dorsum of this joint a small quantity of loosely organized cancellous bone was found lying on top of the joint ligaments. Further exploration inward disclosed the acces-

sory bone shown in the roentgenogram, lying quite loose in its bed, and with very little attachment anywhere. This was removed.

The specimen was an irregular, three-sided pyramid whose greatest diameter was rather less than one-half inch. The base was nonarticular, and faced toward the processus anterior calcanei. The dorsal face was likewise nonarticular. The internal and external faces were covered with articular cartilage and articulated respectively with the head of the astragalus and with the cuboid. The apex and part of the lower border between the two articular faces were directed toward the scaphoid, but did not touch this bone.

The patient returned to his work, October 9. On examination, Jan. 19, 1923, he stated that his pain and disability had been much relieved although there was still some tenderness in the middle of the operation scar. The scar was non-adherent, and the joint mobility was good.

COMMENT

Dwight¹ offers the most comprehensive original information on the subject of accessory bones of the foot in the American literature. In the great number of dissections that he made, he apparently found only two examples of a separate bone in this situation. Since the entire material relating to secondary os calcis is contained¹ in a single paragraph, it is quoted in full (page 17).

"The secondary os calcis is very puzzling, inasmuch as the term seems to be applied to two distinct structures. The most typical one forms the very front of the sustentaculum, and is usually a small bone with a convex posterior border fitting accurately into a corresponding concavity in the front of the sustentaculum. The other nontypical form (which I cannot feel sure is really the same), is a *nonarticular*, rough, ill defined *projection* from the front and top of the os calcis, pointing toward, if it does not reach, the space between the scaphoid, cuboid, and head of the astragalus. It is apparently by an overdevelopment of this process that the os calcis and scaphoid are occasionally brought into contact. Once I have



Fig. 1—Secondary os calcis from above and from the side.

seen, in a very pathological foot what looked like a bone in this place which earlier had been distinct, but had been absorbed into the os calcis."

Figure 50, Plate XXII, is a roentgenogram of a clinical case showing a secondary *separate* os calcis in both feet. These feet were not dissected. Figure 51 is a photograph of a dissected specimen, showing a *separate* bone with the following comment: "Unfortunately, the way it was

connected with the bone below it, whether by joint, cartilage, or ligament, is not noted. It is very common in skiagraphs of the outer side of the foot to see a *projection*

of the os calcis in this direction, which if marked, would go on to join the scaphoid. It is very difficult to determine how much of this effect is due to bone and how much to the position of the plate." Figure 64 is another photograph of a *separate* bone without descriptive matter.

Kleinberg,² in examining 350 roentgenograms, did not find a single example of a separate bone. He found seven examples (2 per cent) of a projection of the os calcis, such as Dwight describes above.

Geist,³ in examining 100 roentgenograms, found two examples of secondary os calcis, but whether or not as separate bones is not stated.

Pfützner⁴ is the source of most comprehensive original information in the foreign literature. Prior to 1896, Stüda and Gruber, quoted by Pfützner, had each reported a case encountered in the dissecting room. In Pfützner's series of dissections of 840 feet, he encountered a separate

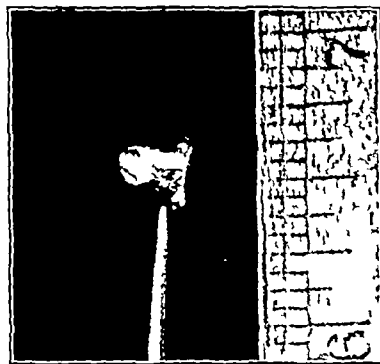


Fig. 2—Specimen removed at operation.

secondary os calcis in the interval between the anterior end of the os calcis, the cuboid, scaphoid and astragalus, sixteen times (2 per cent). The bones varied in diameter from 4 to 15 mm. The attachment to the os calcis was fibrous, but firm. In no case was there a joint here. The cuboidal and astragalar faces were commonly articular and covered with cartilage. The relation with the scaphoid was commonly by a free edge, without contact. In two cadavers, the condition was bilateral. In eleven instances, this was the only accessory bone in the foot under examination, there were four instances of association with a tibiale externum, and one with an os trigonum. Of the eleven cases of isolated occurrences of secondary os calcis, the other foot was not examined in three cases, of the remaining eight, four were accounted for in the bilateral cases mentioned above, in the remaining four, the other foot showed one instance of intermetarseum, one of talus accessorius, one of os trigonum, and one of tibiale externum.

CONCLUSIONS

From the clinical standpoint, the separate ossicle described by Pfützner may be accepted as the typical secondary os calcis. Its occurrence in 2 per cent of his large series of dissections need not lead to the expectation of finding it frequently in routine roentgenograms of the foot, as the smaller and less well developed specimens might easily escape demonstration.

It would seem that a well developed secondary os calcis, acting like a wedge in a series of complicated movements in the middle of the tarsus would be peculiarly liable to avulsion or displacement.

116 East Sixth-Third Street

2 Kleinberg, S. Supernumerary Bones of the Foot. *Am. J. Ray Study, Ann. Surg.* 65: 499 (April) 1917.

3 Geist, F. S. Supernumerary Bones of the Foot. *Am. J. Orthop. Surg.* 12: 403-414, 1914-1915.

4 Pfützner. Die Variationen in Aufbau des Fusskells. *Schwaib. Morphologische Arbeiten* 6: 1896.

1 Dwight Thomas. Variations of the Bones of the Hand and Foot. Philadelphia: J. B. Lippincott Company, 1907.

PRIMARY TUMOR OF THE THYMUS
ASSOCIATED WITH TUBERCULOSIS*HENRY C SWEANY, MD
CHICAGO

Ewing¹ classifies primary tumors of the thymus in three groups (1) lymphosarcoma, or thymoma, (2) carcinoma, and (3) spindle-cell sarcoma (very rare). By far the greatest number fall within the first class. There seems to be considerable question whether the so-called carcinomas of the thymus are carcinomas or merely a variety of the first group. The lymphosarcoma of the thymus, or, more truly, the thymoma, presents a condition almost identical with that presented by the lymphosarcoma of the lymph glands. Clinically, they are indistinguishable, but histologically, there are certain well established differences, which may be roughly comparable to the differences between the structures of the lymph and of the thymus glands. The one



Fig 1—The tumor lying over the great vessels showing attachment to the chest wall at the upper left.

out-standing point of difference in the primary tumor of the thymus is the fact that the reticular cells are larger and more nearly polyhedral, and they originate from the endoderm rather than from the mesoderm, as is true in the reticulum of lymph glands. Occasionally, the polyhedral cells may be very large and grouped,

resembling Hassal's corpuscles. Varying numbers of giant cells, eosinophils and plasma cells may be present.

REPORT OF CASE

E P, a man, aged 40, entered the Municipal Tuberculosis Sanitarium with moderately advanced pulmonary tuberculosis, tubercle bacilli having been found on several occasions in the sputum. Four months afterward, a small tumor developed, 1 inch to the right of the midline, between the second

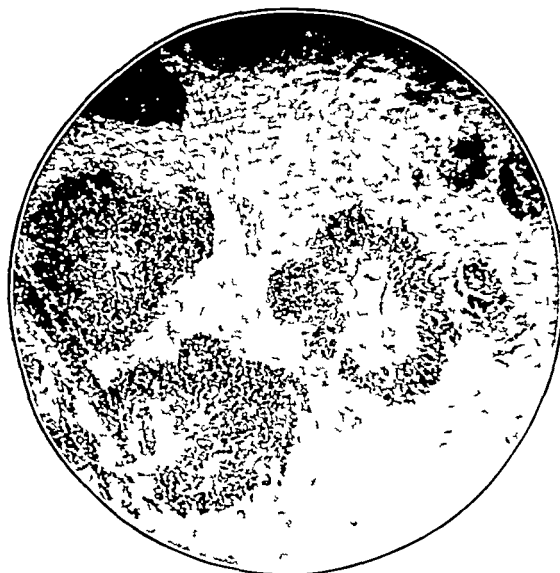


Fig 2—Perithelioma like appearance due to loss of staining power of cells away from blood vessels. This condition is more marked in the older portions of the tumor (low power).

and the third rib, which, on section, was found to be sarcoma. The condition developed rapidly, death ensuing within six weeks. Necropsy revealed a tumor of the thymus gland, extending around the great vessels in crablike fashion. Direct extension of the tumor through the anterior chest wall was also found. Metastasis to the tracheobronchial lymph glands and the liver had occurred. A small tuberculous cavity, 1 cm in diameter, and a few caseous and calcified tubercles, less than 0.5 cm in diameter, all found in the right apex, were the only indications of tuberculous involvement that could be found.

The tumor was 11 by 3.5 cm, flat on the anterior surface and irregular on the posterior. The posterior surface conformed to the outlines of the great vessels. At the upper right portion, there was a circular elevation, 0.5 cm high and 1.5 cm in diameter, marking the attachment to the anterior chest wall. On section, the tissue was firm and offered resistance to the knife. In this respect, it resembled a pancreas in which there is considerable fibrosis. Microscopically, the type of cell varied slightly in the different portions of the tumor. In the portion penetrating the chest wall were many large polyhedral cells, with about an equal number of intervening round cells. There were a few plasma cells, and rather infrequently there was a giant cell. In the tumor proper and in the parts involved by metastasis, the polyhedral cells were predominant. They were joined more or less to each other by cell processes. There were many blood vessels throughout the tissue immediately surrounding which the cells stained deeply. More remotely their staining power was lost completely.

Certain authors² place tumors that have the large polyhedral cells as the principal element among the carcinomas, because of the size and origin of the cells. While this may be correct histologically, it seems that the character of growth and the extremely rapid clinical course would permit as well of their classification with the lymphosarcomas. Authorities seem to be divided

* From the Laboratories of the Municipal Tuberculosis Sanitarium.
1 Ewing, James. Neoplastic Diseases. Ed. 2. Philadelphia: W. B. Saunders Company, 1922. pp. 217-220.

on this point Ewing¹ quotes from reports of Dansac, Hauser and Rubaschow, who alike state that both round and polyhedral cells may be found together in the same tumor. Such appears to be the condition in the one here described. Ewing further states that, on the one extreme, there are the tumors resembling Hodgkin's granulomas, with lymphocytes, reticulum, giant, plasma and eosinophil cells. On the other extreme, there are the pure tumors of rounded or polyhedral reticulum cells. If there exists a true resemblance to Hodgkin's granuloma in the pathologicophysiology action, there should be the usual difference in the clinical manifestations, which would assist materially in an early classification of the tumor. The only point of difficulty here would lie in differentiating this type of tumor from a true Hodgkin's granuloma of the mediastinal lymph glands—a point of only academic interest.

The most important question that arises in this instance is the relation of the tuberculosis to the tumor formation. Many of these tumors are said to be of granulomatous origin. It is, therefore, not unreasonable to suppose that the tuberculosis, though in itself insignificant, incited the cells of the thymus to malignancy.

The course of this type of tumor is typical. They cause death within a short time. There are no successful means of treatment, measures taken are merely palliative. The tumors are, therefore, not difficult to differentiate from any other glandular involvement of the mediastinum, with the possible exception of the type that resembles Hodgkin's granuloma. They grow by

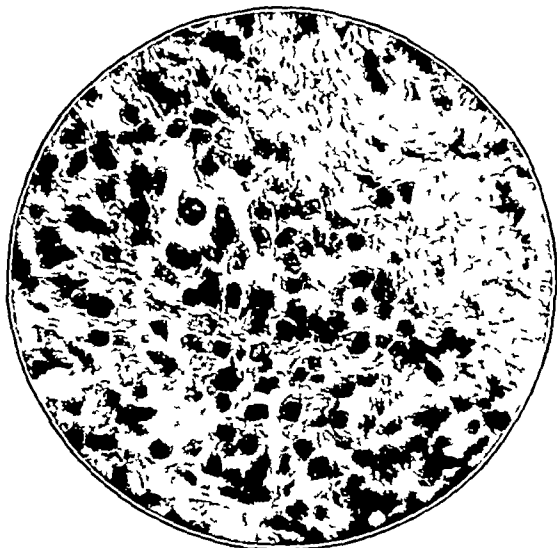


Fig 3—Oil immersion photograph of the edge of the tumor showing the polyhedral cells with very few lymphocytes

direct extension more than by metastasis, and furthermore, they differ from lymphosarcoma, embryologically and histologically, but not clinically.

5601 North Crawford Avenue

The "Cure" for Tuberculosis—The history of tuberculosis reveals a record of attempts at cure which reflects little credit on the medical profession and it well illustrates the waste of energies wrongly directed. Instead of strenuously seeking to understand the nature of the patient's ill health, modern medicine is content still to flounder along in the vain search for 'a cure'.—Sir James Mackenzie *Brit J Tuberc* 17 15 (Jan) 1923

NOAH WEBSTER AS EPIDEMIOLOGIST

ALDRED SCOTT WARTHIN, M.D.

ANN ARBOR, MICH

Oct 16, 1758, there was born, in the best front room of a farmhouse, in the primitive farming village of West Hartford, Conn., a male infant destined to play a very important part in the intellectual development of "these United States of America." Noah Webster is known today, by name, to every high school student in this land, because no American High School

is without a copy of "Webster's Dictionary." But he is known by name alone as the "great lexicographer and philologist" and even his legitimate posterity, as a class, the pedagogues, accord him in their minds no higher place than that of a compiler of a dictionary. Yet Webster might well say, should, be ranged with the Fathers of this nation, since perhaps no other single individual of Revolutionary times contributed more to



Fig 1—Portrait of Noah Webster engraved by Halpin from the painting by Jared Flagg. (From Scudder's Life of Noah Webster)

the welding of the diverse colonial states into a national solidarity than did this New England schoolmaster. For he gave to the developing confederation of states a unity of speech, a common mode of expression of thought, without which there can be no national harmony. And Noah Webster accomplished this chiefly by means of his "American Spelling Book," the first edition of which he published in 1783, at the age of 25, bearing himself the expenses of the printing. Forty-five years later came the fruition of his labors for the unification of the American language in the publication of his great "American Dictionary." On this philological achievement alone his claims to fame might rest securely, but a survey of his long life of extraordinary mental activity reveals an astounding record of scholarly accomplishment in many lines.

He entered into every field of activity in the cultural development of the young American nation, and in every field he left some mark of his influence. Little of this is known to the average American citizen of his generation, and still less, perhaps, is the part he played in the early medical history of this country known to the medical profession of today. Although not a medical man himself, he made a scholar's ally into the arena of medical disputation, throwing himself with all of his enthusiastic ardor, backed by his scholarly knowledge of the world's literature into one of the most bitter medical fights ever waged in this country—the argument concerning the origin of the epidemics of yellow fever, from the coast of which the young nation so feared. The main result of this

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regarded today—was a two-volume work on "The History of Epidemics and Pestilential Diseases," the first American work on general epidemiology, and for the production of which he might well be called the father of American epidemiology, should we wish to enhance his claims to a place among the national fathers

THE SPELLING BOOK AND THE GRAMMAR
How the curious happening of a lexicographer writing an ambitious work on epidemiology in the closing years of the eighteenth century came about



Fig 2—Birthplace of Noah Webster (From the illustration in the 'Life of Noah Webster' by Emily E. F. Ford New York 1912)

can be properly understood only in its relation to Webster's whole life story. If there ever was a man through whose entire life, from early manhood to ripe old age, there ran one unceasing purpose, that man was Noah Webster. He was one of those predestined souls born with a mission to fulfil, and the accomplishment of this ideal became almost an obsession. He bent his whole life to that end. His career as an epidemiologist made but a short length in the full chain of his life, and is explainable only as a part of that whole. In 1782, when 24 years of age and only four years out of college, he began his life-work by the compilation of his "Spelling Book," and his "Grammatical Institute of the English Language," the third part of which was to be a reader. Only the first two parts of this educational trilogy achieved immediate publication, and only the first one a great success. It may be considered the first published American book, and its publication led to the passing of the first American copyright laws. Listen to this extract from its introduction:

The author wishes to promote the honor and prosperity of the confederated republics of America, and cheerfully throws his mite into the common treasure of patriotic exertions. This country must, at some future time, be distinguished by the superiority of her literary improvements as she is already by the liberality of her civil and ecclesiastical constitutions. Europe is grown old in folly, corruption and tyranny; in that country laws are perverted, manners are licentious, literature is declining and human nature debased. For America in her infancy to adopt the present maxims of the old world would be to stamp the wrinkle of decrepitude upon the bloom of youth and to plant the seed of decay in a vigorous constitution.

Such was the patriotism of a Yankee schoolmaster at the age of 24 in the year 1782, six years after Lexington and Concord, and only one year after the surrender of Cornwallis. Does such a youthful expression of nationalism sound bombastic to the youth of 1922, five years after the European debacle? Webster was a typical product of Revolutionary times, of Puritan and Pilgrim stock, his immediate ancestors holding positions of authority in the religious and civil life of the developing colony of Connecticut. Born under the poignant influences of the "Old French War," his boyhood was passed on a primitive Connecticut farm to which the news of the stirring events of the gradual separation of the colonies from the mother-country must have come with greatly intensified force, exerting an especial influence on the youthful minds so isolated. Of the actual story of his boyhood up to the age of 14, we have only family traditions. It was said that he was especially fond of words. His early education must have been that accorded to all New England farmers' boys of Colonial times—"the nurture and admonition of the Lord," with the material assistance of Dilworth's Spelling Book, the Psalter and the Testament, the only educational facilities possessed by the New England district schools. We find him at 14, after this preliminary education, with such a decided love for study and books that he was led to take more interest in Latin grammar than in the tasks of the field. But he had a wise father who appreciated his son's preference for study, and gave him such preparation for college as the times afforded. In 1774, at the age of 16, he entered Yale, his father mortgaging his farm to pay his son's college expenses. In the spring of his freshman year the stirring events of Lexington, Concord and Bunker Hill aroused the patriotism of the Yale youth as it did that of all New England. When General Washington passed through New Haven on his way to take command of the army at Charlestown, Webster was one of the welcoming musicians in the escort of Yale students.

The distractions of the Revolution and the condition of the country affected his course in Yale, the classes were separated and quartered in different towns, and little is known of the part played by individual students, and of their rank and honors during the next seven years. Webster graduated in September, 1778, in a class of forty, one of the most notable that ever came from Yale for the number of distinguished men it produced. The education that these men received was a very limited classical one, but they took it seriously, and the duty of the citizen toward the common good,

THE
AMERICAN
SPELLING BOOK:
CONTAINING
AN Easy STANDARD OF PRONUNCIATION
Being the FIRST PART of a
Grammatical Institute
OF THE
English Language.
IN THREE PARTS.
By NOAH WEBSTER, Jun. Esq.
The EIGHTH Edition, with additional Lessons.

PHILADELPHIA:
Printed by W. YOUNG, Bookeller and Stationer, at the
Corner of Chestnut and Second-streets.
M DCC, LXXXVIII

Fig 3—Title page to the American Spelling Book Edition 8 Philadelphia, 1788

as emphasized in the ancient classics, stimulated their patriotism and strengthened their ideals of service to their own troubled country. Reared and educated in such an atmosphere of patriotic fervor, Webster was marked for life by its influences, and the desire to aid in the intellectual and moral development of the young American nation became in his mind an obsessing passion, it dominated all of the endeavors of his long and vigorous life, persisting to its close. His conception of national service was a great one, and he clung to it in spite of the greatest obstacles and discouragements,

To diffuse an uniformity and purity of language in America—to destroy the provincial prejudices that originate in the trifling differences of dialect and produce reciprocal ridicule—to promote the interest of literature and the harmony of the United States—is the most ardent wish of the author, and it is his highest ambition to deserve the approbation and encouragement of his countrymen.

Fig. 4—Foreword to the American Spelling Book.

bending all of his unfailing energies, with courage undiminished, toward the accomplishment of his ideal. Through all of his enterprises there may be traced the thread of his great purpose, and that was the improvement of the intellectual and moral life of the independent American people.

He had selected the law as his profession, but the poverty of the country after the Revolution made it impossible for him to gain a living through legal practice. Immediately following his graduation, his father had presented to him an eight dollar continental bill, worth about fifty cents on the dollar, with the remark that he could do no more for him. It is recorded that Webster shut himself up in his room for three days, considering his future, and reading Johnson and the *Spectator* for spiritual consolation. How significant this seems when viewed in the light of his future career! He later in his life spoke of the deep and permanent effect produced on his mind by Johnson's "Rambler." There was nothing for the poverty-stricken young man to turn his hand to for immediate means of obtaining a livelihood but teaching school, so Webster became a Yankee schoolmaster, continuing his own studies at the same time, taking his Master's degree at Yale in 1781, and obtaining admission to the bar in Hartford. The very fact that the disturbed condition of the country prevented any prosperous career in law, and turned him to teaching was probably the decisive turn of fate that determined his career as a lexicographer. His own intrinsic love for words and language, his classical education, the patriotism engendered by the conditions of the times, the separation of America from Great Britain, and the influence of Franklin made him dissatisfied with the educational material then in use. The chief implement of the schoolmaster of the day was Dilworth's Spelling Book, originally designed for the charity schools of England and Scotland. Webster found this especially unfit for American use, and out of this dissatisfaction there gradually developed an ever-growing conviction of the need for a separate American literature and education. And so the spark of the divine fire of a creative plan was kindled. "America must be as independent in literature as she is in politics, as famous for Arts as for Arms," and so the famous Speller was born, with an American flavor all its own, and arranged much more logically and with greater common sense than its English predecessor. The times

were ripe for it, and it had an immediate success. On this success his whole future career was founded.

EARLY ACTIVITIES

A growing sense of the value of his own ideals led him now into a life of the most varied activities. As early as 1785 he wrote in his journal, "I have begun a reformation of the language, and my plan is yet but in embryo." He wrote dissertations, and gave subscription lectures on the improvement of the alphabet and the American language, throughout the chief cities of the federated states, even to Charleston, South Carolina. He met and corresponded with Franklin, Washington, Benjamin Rush and other leading minds of the period, and impressed them with his views on these matters. Franklin especially was drawn toward the youth, and later endeavored to have him carry out his ideas of spelling reform. At one time Webster contemplated becoming the private secretary of George Washington, but dropped the matter as he feared that his time for intellectual activity on his own part would be too restricted.

He founded and edited newspapers and magazines, and wrote constantly for the public press on every subject of general interest to the nation, particularly on methods of improving the general system of education. He entered into politics, impressed with the weakness of the Confederation, his political efforts were in favor of a stronger and more centralized form of general government. In 1788 he proposed to Benjamin Rush a plan to found a literary and political magazine in Philadelphia. It materialized in New York instead, in the form of the *American Magazine*, with the motto "Science the guide, and Truth the



FABLE I Of the Boy that stole Apples.

AN old Man found a rude Boy upon one of the Trees stealing Apples

Fig. 5—Example of the wood-cut illustrations of the American Spelling Book, Edition 8, 1788.

Eternal God." It lasted but a year, and the venture ended in considerable financial loss to him. His plans were far ahead of the possibilities of the times so far as both literary and financial support were concerned. In New York he founded the Philological Society. In Boston, in 1789, he published "Dissertation on the English Language," which he dedicated to Franklin. Characterized by their strong national spirit, these essays were written with the ideal "Our political harmony is therefore conceived in a uniformity of language." In 1790 he published a volume of moral tales and fables anonymous in I and, unde

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name of "The Prompter" Written in the style of Johnson's "Rambler" and in the manner of Franklin, with the motto "To see all others' faults and feel our own" these lively and pointed essays had a great popularity, and were copied into all of the journals throughout the country. At least fourteen legitimate editions were printed of this little volume of essays, and it was extensively pirated both in this country and in England, where it was pronounced to be "a very good shilling's worth publication." In the same year he also published anonymously an edition of Governor Winthrop's Journal, showing his early recognition of the value of the preservation of the records of early colonial history. In this enterprise, as in others, Webster was a pioneer, and showed an intellectual judgment and vision far ahead of his time. Into "The Little Reader's Assistant," published this year, he introduced a "Federal Catechism" in explanation of the Constitution of the United States and of the principles of government and commerce, the first attempt to introduce instruction on matters of civil government into the common schools. In the same year he published also a "Farmers' Catechism."

This brief recapitulation may seem to show the multiplicity of his activities and the catholicity of his interests during the first thirty-two years of his life. Nothing affecting the life of the American people during this time escaped his interest and active attention. Their language, education, politics, political economy, morals, religion, laws, vital statistics, agriculture and general culture all received treatment at his hands. Naturally, a man who could give intelligent discussion and treatment of so many diverse matters would arouse resentment because of that very ability. It was a primitive society, with a thinly spread and localized culture. The nation was making history too rapidly and the development of literature and the arts lagged very far behind. Local feelings were predominant, Philadelphia vaunted itself, not only as the seat of the government, but because of its literary superiority and still other excellences. Benjamin Rush, writing to Webster in 1788, said "I object to your printing it in New York. Philadelphia is the primum mobile of the United States. From habit, from necessity and from local circumstances, all the states view our city as the capital of the New World." The union of the colonial states was in economic and political tie—the a broader national spirit and culture, a national tie—the very ideals for which Webster was working with all of his might—did not yet exist.

THE DICTIONARY

Webster possessed in idea—a great idea—which he kept constantly in mind and presented on all possible occasions. The patriotic ardor the self-assertiveness and aggressiveness of this crude Yankee youth were taken by many for self-conceit and vanity. He was nicknamed the "In-titute," the "Monarch," his reformed spelling was called deformed spelling. Par-

ticularly were the Boston literati offended by Webster's belief in himself and his national ardor and enthusiasm. Ebenezer Hazard, later Postmaster General, wrote to Jeremy Belknap of Webster "He certainly does not want understanding, and yet there is a mixture of self-sufficiency, all-sufficiency, and at the same time a degree of insufficiency about him which is intolerable." And Belknap, writing to Hazard, calls Webster "critic and concomb general of the United States." With the unpleasant attitude of these smaller men may be contrasted that of the larger minded master spirits of the time in Philadelphia—Franklin, King, Hopkinson, Dickinson, Benjamin Rush and others who had encouraged him with their approval of his schemes and plans for educational reforms, and asked the aid of his pen in furthering theirs in developing the policies of the government.

Through these youthful years of varied achievements, undaunted by his poverty or the opposition of his critics, the growing conviction in Webster's mind of the need of a separate American literature and education fanned the divine fire of his creative plan for the writing of a complete "American Dictionary." He began his labors on this in 1800, and although in the meantime he published abridged forms, the first great quarto of the complete form was not published until 1828. More than twenty-five years of the most exacting and painstaking labor did he give to this great work. We are amazed when we consider the magnitude of his conception, and the tremendous difficulties in carrying it out. The limitations of his own education, the poverty of the library facilities of the United States, the general paucity of American scholarship, his own financial condition—all of these potent arguments against so

The Description of a BAD BOY.

A Bad Boy is undutiful to his father and mother, disobedient and stubborn to his master, and takes no pleasure in improving himself in any thing. He is sleepy and slothful in the morning, too idle to clean himself, and too wicked to say his prayers. He is always in mischief, and when he has done a fault will tell twenty lies in hopes to clear himself, which is only making bad worse. He hates that any body should give him good advice, and when they are out of sight, will laugh at them. He swears and wrangles, and quarrels with his companions, and is always in some dispute or other. He will steal whatsoever comes in his way, and if he is not caught, thinks it no crime, not considering that God sees whatsoever he does. He is frequently out of humor, and fullen and obstinate.

Fig. 6—Description of a bad boy from the American Spelling Book Edition 8 1788

extravagant a plan deterred him not a whit. He intended his dictionary to be not only a manual of words but an every-day encyclopedia. Through all of his intensive literary labors in acquiring a working knowledge of new languages, in word-hunting, synopsis-writing and definition-coming he was animated by his ideal of giving to the people of the United States "one language and one tongue." The broad interest which he maintained in the life of the nation, in its politics, in civic affairs, in theology and in other matters constantly revived him, and gave him courage to persist in his heroic labors.

Yet his Journal and the letters of these years reveal periods of discouragement. In 1809, he writes "I have accumulated such a mass of materials for a dictionary, materials which no other person could use to advantage, that I think it my duty, as it is my pleasure, to prosecute the work." His financial difficulties became greater. In 1812 he moved his family from New Haven to Amherst, Mass., that his living expenses might be cheapened, and that he might have more undisturbed time for work on his dictionary. In his study, a large front room looking out upon the hill, late to be the seat of Amherst College, he worked at a

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large table on which were spread his works of reference, passing around the table from one volume to another, collating the radical words in twenty different languages, including the seven Asiatic tongues of the Assyrian stocks. A knowledge of Sanskrit, unfortunately, he was not able to acquire. During all of this labor he became interested in the development of the Amherst Academy, and in 1818, while Webster was president of the board of trustees, there was organized the institution which became the kernel of Amherst College. During these years of literary toil he developed a fine garden about his home, in which he cultivated vegetables, fruits and flowers with equal pleasure and success.

In 1820 he writes that he had expended nearly \$25,000 of his own, and \$1,000 of subscribers' money toward his dictionary labors. We shall soon see where his own money came from. By 1822, Webster had exhausted all the resources of the American libraries of his time. To finish the labor of years he must go to Europe and study for a time in the larger ones of France and England. And helped by his children, one living son, William, a lad of 22, went, at the age of 66, to complete and perfect his dictionary. He arrived in Paris in the first week of July, and completed his work there by September 13. He then went to Cambridge, where he remained, with visits to London, until his return to America in June, 1825. It is an amazing picture presented by the visit of this unknown American scholar to these seats of ancient learning, inspiring but pathetic. In Paris he had no acquaintance of literary or scholarly repute, he gained access to the Royal Library through the aid of Mr. Brown, the American minister. He writes, nevertheless, that he saw in Paris all of the books he wished to examine, save one, which he missed through his ignorance that the Royal Library was closed throughout the month of September. In Cambridge he knew but one man, Rev. Dr. Lee, to whom he had a letter of introduction. The same general indifference shown by English scholars and book-publishers to all American literary efforts was extended to him. From London he writes on Feb. 15, 1825, "I lived very little known in Cambridge, till the last three weeks, when I was invited to dine with the officers and fellows of Trinity College." This was followed by expressions of interest in his work from some of them, and regret that they had not been made acquainted with him earlier.

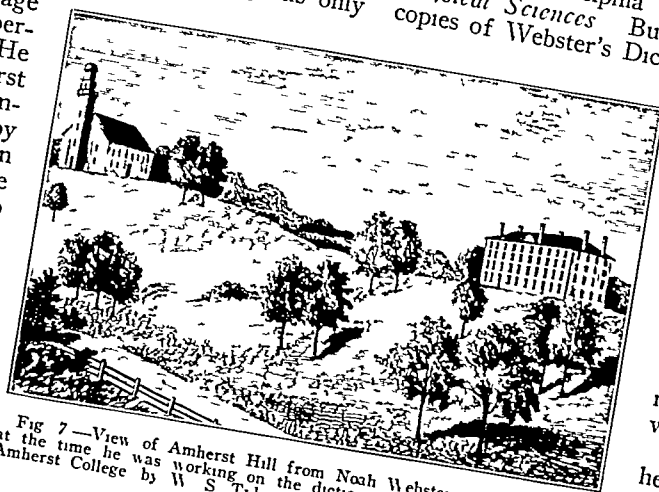


Fig. 7.—View of Amherst Hill from Noah Webster's study windows at the time he was working on the dictionary (From the History of Amherst College by W. S. Tyler 1873)

revised edition of his dictionary was published here to speak of Webster's subsequent labors, his revised version of the Bible, and his later writings. In 1841, at the age of 83, the revised edition of his dictionary was published. He died in 1843, in his eighty-fifth year.

SOURCE OF INCOME

To return to the Spelling Book! Through all the years of labor on the dictionary it was the income from this little fifteen-penny volume, less than a cent a copy, that kept the fire going and the pot boiling, and made possible the achievement of the greater dictionary. It appeared just at the proper psychological time. Seized upon by all of the young patriotic schoolmasters, of the early days of our Nation's life, it was carried from the hillsides of New England to all parts of the country, as the tides of migration and settlement flowed through the valleys of the Alleghenies, through Ohio and Indiana, to the oak openings of Michigan and the prairies of Illinois. By 1837 at least fifteen million copies had been sent into circulation by 1865 at least 42,000,000. Between 1876 and 1890 the records of Appleton & Co. showed a sale of eleven and a half million copies more. The total legitimate sale must far have exceeded fifty million. The dictionary is repeatedly published with acknowledgment to the undoubted an important contribution of a greater number.

wrote of this achievement "When I had come to the last word, I was seized with a trembling which made it somewhat difficult to hold my pen steady for writing. The cause seems to have been the thought that I might not then live to finish the work, or the thought that I was so near the end of my labors. But I summoned strength to finish the last word, and then, walking about the room a few minutes, I recovered."

The American Dictionary in two volumes quarto was published in an edition of 2,500 copies, November, 1828, by Converse of New York, the printing being done by Hezekiah Howe of New Haven. The publisher had to send to Germany for the types of the Oriental languages, otherwise, the work was wholly American. Yet a writer in the *Edinburgh Review* had written spitefully "In the four quarters of the globe, who reads an American book or goes to an American play or looks at an American picture or statue? What does the world yet owe to American physicians or surgeons?" This quotation became a title-page motto for the *Philadelphia Journal of the Medical and Physical Sciences*. But in 1832 an edition of 3,000 copies of Webster's Dictionary was published in England. It was seventy years since the publication of Johnson's Dictionary, and scarcely an improvement had been made in the various editions through which that classic had passed. In the first edition of Webster's Dictionary there were twelve thousand new words and over thirty thousand definitions not contained in any previous work.

We cannot take space here to speak of Webster's subsequent labors, his revised version of the Bible, and his later writings. In 1841, at the age of 83, the revised edition of his dictionary was published. He died in 1843, in his eighty-fifth year.

His efforts to obtain from the scholars of Oxford and Cambridge a discussion of certain unsettled points in pronunciation and grammatical construction were of no avail. His letter to Oxford on this point was not even answered. Nevertheless, he had accomplished the great object of his life. His opus magnum, the great Dictionary, was finished in Cambridge, in January, 1825. He

NOAH WEBSTER—WARTHIN

760 schoolbook used in America Little wonder that one
writer should say
that Dr. Webster did believe in himself and
able heroism has laid the founda
States They have
litt

It was well that Dr Webster did believe in himself and his own work. His indomitable heroism has laid the foundation of a common tongue for the United States. They have one orthography and nearly one pronunciation. His little "Spelling Book" has in a measure prevented the dialects which exist in the counties of England and the patois of the departments of France, and his views of language have been some of the shaping and controlling forces all over our continent.

Webster had surely accomplished his ideal more completely than falls to the lot of the great majority of men

SCIENTIFIC ACTIVITIES

In the light of the varied intellectual interests of Webster's life as given above, we may now return to

AN

CONARY

AN
AMERICAN DICTIONARY
OF THE
ENGLISH LANGUAGE:
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ENGLISH

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DICTORY DISSERTATION

AN INTRODUCTORY
ON THE
ORIGIN, HISTORY AND CONNECTION OF THE
LANGUAGES OF WESTERN ASIA AND OF EUROPE
AND A CONCISE GRAMMAR
OF THE

OF THE
ENGLISH LANGUAGE

BY NOAH WEBSTER, LL. D.

IN TWO VOLUMES
VOL I

NEW YORK
PUBLISHED BY S. CONVERSE
1828

IN THE
VOL I

~~It is not to be omitted among the benefactors of posterity, even still, y has even still, in the arguments that concerns—Reader~~

NEW YORK
PUBLISHED BY S. CONVERSE
1828

Fig 8—Title page of the first edition of the dictionary New York
1828

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Fig 8 —Title page of the first edition of the
1828

R—*WARTHIN*

pestilences and epidemics occurring in the history of the world, with the definite plan of analyzing this knowledge in the attempt to find some common causal factor.

I have seen that Webster had received no scientific training and he had at this time no close personal acquaintance with any of the leading scientists of the day. He had met Dr. D. H. Burton, a prominent physician of New York, who had been one of the first to recognize the importance of the study of the history of the world, with the definite plan of analyzing this knowledge in the attempt to find some common causal factor.

We have seen that Webster had received no scientific training of any kind, and he had at this time no close association with any medical man. He had met Dr. Rush and corresponded with him on the founding of a magazine, but not on medical matters. Yet between 1796 and 1802 he published two medical works and sent a number of letters and articles to medical journals. His name appears frequently in the indexes of the earliest volumes of the "Medical Repository," and he is quoted as an authority on epidemics as late as 1855. This sudden excursion, or intrusion, as some of his medical contemporaries regarded it, of a literary school-master and lawyer into the field of medical inquiry may well seem an extraordinary phenomenon requiring some especial explanation. Was this just another example of Webster's know-it-all conceit, or did he have legitimate reasons for breaking into medicine as a vehement advocate of certain doctrines as to the causation of disease?

We are sure of one thing that, although not trained in science, Webster possessed a scientific mind. He was a most keen observer, and intensely interested in natural phenomena. That we know from his Journal, in which he recorded from 1784 to 1820 the events of his daily life that seemed to him most interesting and important. It was but natural that in the earlier years of this diary "the ladies" formed a not inconsiderable portion of the material of his observations, but, after he achieved marriage, they gave place to comets, meteors, floods and storms, so that his journal became largely meteorological in character. He registered temperatures, precipitation and the character of the prevailing winds. It is recorded that when the French scientist Volney, in 1796, wrote a circular letter to the American press asking for information in regard to winds, Webster sent him observations extending over a period of eighteen years. Later in life he carried out a series of experimental investigations on the nature of dew, anticipating in his method and conclusions by about fourteen years the theories of Wells in London. There can be no doubt that he had a real and vital interest in natural phenomena, but he claimed nothing as a scientist.

To these powers of observation he added a decided statistical bent. When he visited a strange city, he took pleasure in counting the houses—1,950 in Baltimore in 1785, 3,500 in New York in 1786, 2,600 below Market Street in Philadelphia—one of our earliest census attempts, if not the first one. Bills of mortality had an especial interest for him. Apparently he was always much impressed by the sight of disease. As a boy in 1776, he visited the Revolutionary camps with his brother, and was so struck with their insanitary conditions that the picture remained clear in his memory until late in life, when he wrote, "We found about half the soldiers sick with dysentery and fever, so that the very air was infected." In his diary he mentions the births and deaths occurring in his immediate community, and also the cases of illness, often giving a concise but forcible description of the main symptoms. Though not medically educated, he had a wonderful natural power of clinical observation and a facility of description that would have taken him a long way had he elected to become a physician rather than a writer of dictionaries. He was an instinctive scientist, without

NOAH WEBSTER—WARTHIN

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special scientific training or knowledge, except that acquired through his own reading. His manifold interests thus systematically practiced in his daily life made him anticipate in a humble way the census, the department of vital statistics, the weather bureau, the health board and the school board of modern times. No wonder that some of his contemporaries thought him "all-too-sufficient." Undoubtedly his youthful and vigorous enthusiasm exhibited along so many lines of mental activity made him appear conceited. That was inevitable, and so he appeared to some of his less gifted contemporaries. One does not, however, get such an impression of the man from his own writings. Far in advance of the times he saw the need and the importance of these statistical observations, and he carried them out, as far as he was able, consistent and true to his ideal of national service.

EXTRACTS FROM DIARY

From his diary we can take the following extracts as illustrating the points made above

- 1784 January 21 Saw the comet in the evening and danced at Dr Butler's
- February 18 At evening rode to Weathersfield with the ladies, who reminded us of the mile-stones and bridges
- 19 P M Rode to East Windsor, had a clergyman with us who sang an excellent song Mile-stones and bridges almost totally neglected
- March 25 In the evening saw a multitude of pretty faces But my heart is my own
- August 30 Saw an object of charity, a cripple His arms are small and without much strength and so confined to his body that he can move his hand only his legs are bent under and grow to the thighs several inches from his knees, they are wholly useless His body is nearly perfect, his health and his speech good, he is forty-eight years of age
- September 6 Divide my time between the ladies and my books
- 1785 November 27 Take a view of the city (Peabody) find about 300 houses, an unhealthy place.
- 1786 January 3 Number houses (Annapolis) 200 a pleasant city and more elegant houses in proportion than in any town in America, ground covered with verdure.
- 1788 April 11-14 At St. Pauls (New York) church a mob collected at the Hospital and destroyed it

- 1789 October 24 President Washington arrives in Boston, and all the world is collected to see him I am almost confined with the influenza This differs from a common cold, by affecting the eyes and taking away all taste The head appears to be fastened with chains and the disorder is attended with a cough The best remedy is hot liquids to produce perspiration, or a sweat brought on by violent exercise in a warm room But if the stomach is disordered and refuses diet, a purge is necessary
- 1793 September 18 The first frost appears this morning, which after the hottest summer ever known, is very agreeable The plague rages in Philadelphia, or a disorder like it The dysentery and influenza common all over the country, but not formidable
- September 29 Public prayers ordered every afternoon on account of the fatal sickness in Philadelphia
- October 4 Rain Circuit Court rises
- 5 Cool Vines first killed by frost
- 6 Sunday Pleasant Cool
- 7 Ditto No favorable news from Philadelphia as to the fever, it still rages
- 8 City Court Pleasant
- 9 Pleasant Very warm
- 10 Very warm like June
- 11 Ditto fever in Philadelphia carried off 120 in a day
- 12 Cloudy
- 15 Wind change Cool
- 16 My birthday, completing 30 years, half the life of man Very cold
- 17 Cold disorder in Philadelphia abates

INTEREST IN FEBRUARY 1801

The yellow fever epidemic of 1793, in Philadelphia, was the immediate cause of Webster's entrance into the field of epidemiology. The principal city, and the seat of government, but also the principal center of the population, had been laid waste for more than a year. The fever had killed the citizens and created a panic. The Secretary of the Treasury, James Mifflin, and the Governor, Thomas Mifflin, had fled the city. The fever had also spread to other parts of the country, and had killed many people. Webster, who was then a young man, was interested in the disease, and he began to study it. He found that the disease was caused by a miasm, or a bad smell, and he began to experiment with it. He found that the disease could be prevented by a good ventilation of the air, and he began to apply this principle to the treatment of the disease. He found that the disease could also be cured by a good ventilation of the air, and he began to apply this principle to the treatment of the disease. He found that the disease could also be cured by a good ventilation of the air, and he began to apply this principle to the treatment of the disease.

Webster's sympathies and mental activities were much aroused by the accounts of the Philadelphia epidemic. In a long letter to Wolcott dated October 10, 1793, he shows that he already had formulated ideas of his own in regard to the nature of pestilential diseases, and their origin. This letter is too long to quote in full, but it is of great importance in showing what a conception of disease an unusually intelligent layman of that day might possess.

By the last accounts from Philadelphia we learn that the raging malady still spreads and is more fatal. We are told also that the College of Physicians have pronounced it the plague. I am not acquainted with diseases of this kind, but I have an idea that the plague, the yellow fever of the West Indies, and the malignant fevers of our country, are all diseases of the same genus, differing in degree and virulence, according to the climate. I take them all to be, or to proceed from a tendency to a dissolution of the blood, or to putrefaction, or to use a chemical phrase, a decomposition of the parts which compose the system.

[He then goes on to point out relationships between these epidemic diseases and latitude, physical situation, climate, temperature, bad air, and accumulation of filth in a great city.]

The great reason why the same parallels of latitude in America have not been subject to such putrid diseases hitherto, I suppose to be our long cold winters. All the causes I believe to be of inferior force. Short cold rainy summers will hardly predispose the body to putrefaction. But the last winter was unusually open and warm, and the summer past for degree and continuance of hot dry weather, perhaps was never equaled in America.

[He writes of the daily public prayers offered, and of the desire of the citizens of New England to send relief to the suffering Philadelphians.]

We are not apprehensive of danger here, and no measures to restrain travelers have been taken. Though in Boston such measures are taken. One question I beg you to answer, respecting the disease. Do people sicken and die with it, without being exposed to its contagion? If so are such instances common?

He advises that the people retire to the country, and suggests that large streams of fresh water might be brought from the falls of the Schuylkill and made to flow through the streets. This letter indicates that he has not yet fully made up his mind as to the contagious or noncontagious character of the epidemic and the physicians of Philadelphia, and soon those of the entire country, were engaged in active dispute concerning this great problem. In Philadelphia, itself, the controversy raged with intensity. Dr Benjamin Rush, the greatest physician of the day, and one of the greatest the American nation has ever produced, the "father of American psychiatry" was the first to recognize the nature of the disease, about the middle of the month of August. In his "Account of the Bilious Yellow Fever of 1793" one of the most masterly descriptions of an epidemic ever written. Rush writes:

This discovery of the malignity, extent and origin of a fever which I knew to be attended with great danger and mortality, gave me great pain. I did not hesitate to name it

the bilious remitting yellow fever. I had once seen it epidemic in Philadelphia in 1762.

I expressed my distress at what I had discovered to several of my fellow citizens. The report of a malignant and mortal fever being in town spread in every direction, but it did not gain universal credit. Some of these physicians who had not seen patients in it denied that any such fever existed, and asserted (although its mortality was not denied) that it was nothing but the common annual remittent of the city. Many of the citizens joined the physicians in endeavoring to discredit the account I had given of this fever and for a while it was treated with ridicule or contempt. Indignation in some instances was excited, against me, and one of my friends, whom I advised in this early stage of the disease to leave the city, has since told me that for that advice he "had hated me."

Rush was confident that the disease had not been imported, but had arisen from the putrid exhalations of a quantity of damaged coffee on one of the wharves.

The College of Physicians declared it to be a contagious fever, and issued a statement to that effect. Rush inserted in the *American Daily Advertiser* of August 29 an address to the citizens of Philadelphia, giving his opinion as to the local origin, warning the public against the spot where the coffee lay, in the hope of checking the progress of the fever as far as it was continued by the original cause. Fresh indignation was excited against Rush, he was threatened with all sorts of indignities, even personal assault, but he remained steadfast in his convictions. The mayor ordered the coffee removed, but the epidemic lasted until November, the number of deaths between August 1 and November 9 being 4,044, a death rate of about one in ten of the total population. Rush remained at his post, doing heroic work, on October 9 he himself contracted the disease, but fortunately recovered after a long convalescence. The psychologic effects on the country were very great, the epidemic was celebrated in verse and in one of the early American novels, Brown's "Arthur Mervyn."

The next year, 1794, saw another epidemic of yellow fever in Philadelphia, of less severity, and the disease appeared in New York, New Haven, Baltimore, Charleston and elsewhere, and for the next two years sporadic cases developed in many places. In 1795, in New York, 700 people died of the disease in a few weeks, and there was great mortality in the cities of Norfolk and Charleston. Again in 1796 there were lesser epidemics, even as far north as Newburyport, Mass. The physicians of the whole country were now divided into two hostile camps, those who believed the disease was imported and contagious, and those who favored the view that it was of local origin and dependent on a local or general atmospheric state.

Webster threw himself with enthusiasm into this discussion. He had come to believe more and more in a close relationship between epidemics and natural phenomena, and now busied himself in collecting material in support of this view. His diary becomes more than

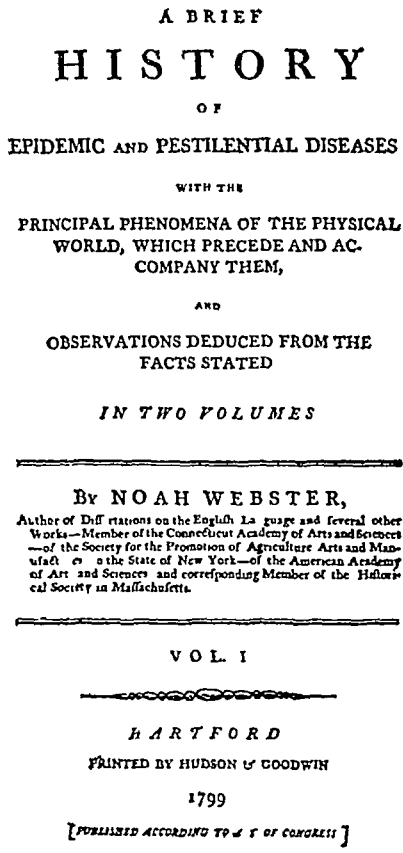


Fig. 9.—Title page of the *History of Epidemic and Pestilential Diseases*. Hartford 1799.

ever loaded with meteorological observations. He went to the public libraries of New York and Philadelphia, to Yale and Harvard College in search of material concerning this subject. He collected all that he could from the historical works available in the country bearing upon the occurrence of epidemic diseases in all parts of the world at all ages of history. His education and literary methods made him especially adapted to such library research, aside from his own instinctive fondness for such investigations. He turned also to the living for individual experiences with epidemic diseases, he wrote to his usual correspondents, he sent out circular letters to the prominent men of the day, to the historians, to the most prominent physicians, the list too long to be given here, to foreign countries, he took depositions of sailors and other persons, collecting an enormous amount of material which he arranged systematically and analyzed with that tireless indefatigability which seems the most remarkable characteristic of this remarkable man. During these years he carried on a most interesting correspondence with Dr. Rush bearing upon the nature of epidemic diseases.

The first fruits of these investigations were published in 1797, in a series of twenty-five letters in the public press, addressed to Dr. William Currie of Philadelphia, one of Rush's most bitter antagonists. What Rush thought of Currie is shown in a letter to Webster dated Feb. 7, 1798. "I wish you would address your letters to the College, instead of Dr. Currie. The latter is thought a weak man by his friends, and something worse by his enemies. His name will hurt the circulation of your book in Philadelphia."

THE HISTORY OF EPIDEMIC DISEASES

In his diary of 1798, Webster wrote on April 10, "Begin to write my History of Epidemic Diseases from materials which I have been three months collecting." In August of this year, yellow fever appeared in New York and Philadelphia in a more virulent form. In his diary of 1799, Webster writes:

My history of Pestilential Diseases was published in December, 1799. On the 14th of December, 1799, died the Great and Good Washington in the 68th year of his age, of a Cynanche Tonsillaris, after 24 hours illness. All America Mourns.

"A Brief History of Epidemic and Pestilential Diseases," in two volumes, was published in 1799, by Hudson and Goodwin of Hartford, and was reprinted in London, in 1800. There was some talk of a German translation, but apparently this was never made. In the introduction he explains why a publication on the subject of diseases should come from the pen of a man who has never before turned his attention to medical sciences. He distinguishes clearly glandular or inguinal plague of the Levant and the bilious or American plague commonly called yellow fever. He gives concise definitions for infection and contagion.

That quality of a disease which communicates it from a sick to a well person, on simply inhaling the breath or effluvia from the person of the diseased, at any time and in any place, may be called specific infection. Such is the contagion of the smallpox and the measles, which are, therefore, called contagious diseases.

That quality of a disease which though insalutary will not communicate it, without the aid of other causes, as warm weather, or peculiar situation and habit of body, and which requires the healthful person to be a considerable time under its influence to give it effect, may be called infection. Such is the quality of the plague, in all its forms, dysentery, and all typhus fevers.

This is a very remarkable distinction for one who had no knowledge of the actual causes of these diseases. He came as close to the truth as any one could who knew nothing at all of living micro-organisms as the real causal agents of contagion and infection. As he, himself, observes, such a distinction had not been defined or used by European physicians, and it is of extraordinary interest that a layman on the basis of literary methods of study alone should come as close to scientific truth as it was possible for any one to do at that time, in the absence of all the facts of the parasitic nature of infection.

The main point of his argument is, however, the identification of general or primary contagion with a pestilential stage or constitution of the atmosphere which produces disease or disposes the body to disease, and the chief aim of his work is to support this theory by a historical study of the relations between epidemics and natural phenomena producing such a pestilential atmosphere. After a short section in which he gives the views of various authorities on the origin of plagues and epidemics, he starts boldly at his task of historical investigation of epidemics and the concurrence of natural phenomena beginning with the five books of Moses, through Greek and Roman times, the early Christian era, and

all of the succeeding centuries, up to the year 1799. This took up the first volume. His plan was a simple one. From all possible historical sources he collected the facts of the recorded epidemics of the world, collating with these the records of natural phenomena, such as comets, meteors, eclipses, earthquakes, famines and storms. The accompanying examples of his pages will show his method and his material.

It was but natural that Webster should be troubled by the difficulty of synchronizing dates, and he was sometimes hard put to it in his attempts to show the desired sequence between natural events and epidemics of disease. He naturally was extremely honest, but in a work of this kind, it was easy enough to ascribe any embarrassing discrepancies to historical inaccuracies or deficiencies. In his second volume he gives the bills of mortality for the last two centuries with the principal phenomena of the elements, with a discussion on the history and the tables showing pestilential periods of the atmosphere to be indicated by an increase of

SECTION XII

Of the Influenza, or Epidemic Catarrh

AS the catarrh appears to be the disease which is most closely connected with pestilence, and the least dependent on local causes or the sensible qualities of the air, I have collected all the well-defined instances of this epidemic which have occurred to my researches, and arranged them in chronological order; placing against the year the most remarkable physical occurrences, and mentioning those which fell within the years next preceding and following:

- | | |
|-------|--|
| A. D. | CATARRH EPIDEMIC IN |
| 1174, | the year before an eruption of Etna, and followed by great mortality [Chafin in the accounts of this disease.] |
| 1510, | the same year with an eruption in Iceland, and following great earthquakes. Humid air—a comet appeared the next year [Chafin.] |
| 1551, | the year after an eruption of Etna, and a comet. Season wet. |
| 1557, | the year after an eruption of Etna. Season mostly wet but in some countries dry; a comet the same year [Chaf.] |
| 1580, | the year after an eruption of Etna. Cool dry north wind—A comet. |
| 1587, | the same year with an eruption in Iceland—and after a comet. |
| 1591, | after earthquakes in 1590, and a comet. |
| 1597, | the year after earthquakes and a hard winter. Rainy season, and a comet the same year. |
| 1602, | the year after earthquakes, volcano and severe winter. Cold and wet season. |

Fig. 10.—Page from the History of Epidemic and Pestilential Diseases

mortality in different parts of the world. One chapter is given to a discussion of the "influenza or epidemic catarrh." The remainder of this volume is taken up by an argumentative discussion of the order, connection and progression of pestilential epidemics, the extent of a pestilential state of air, the phenomena attending pestilential periods, with conjectures as to the causes, a full discussion of his views on contagion and infection, finally, preventive medicine is given consideration in a long chapter on the means of preventing or mitigating pestilential diseases, and a final chapter on the disappearance of plagues in parts of Europe and of new diseases. Webster even then cannot leave his subject, and gives extensive addenda on lunar influences, electricity, popular modes of guarding against infection, venesection, vapor or mephitic air, revolution of certain comets, and at the very last a postscript—all of these suggesting immense desk labor, overfilled notebooks and prodigious use of time, and all accomplished without amanuensis or typewriter.

The upshot of it all was the chief theorem that "the principle which gives to fevers the pestilential quality consists in the *insensible* properties of the atmosphere." How near he came to the germ-theory, and yet how far away from it!

To Benjamin Rush he wrote, Nov 26, 1799

I feel a good deal of confidence in my proofs that epidemic diseases of all kinds proceed from chemical changes in this fluid in which we live and whose vivifying and elastic powers constitute the source of life.

After all, I more and more see the difficulty of reaching the cause. That the electrical principle is the agent I am inclined to believe, indeed I have not the power to resist the evidence of it, but by what combinations with aerial substances, I am ignorant.

Webster's work was received by the medical profession according to their individual beliefs. Those, like Rush, who believed in the local origin of epidemics, praised it highly, the other school condemned it bitterly. It was reviewed in the *Medical Repository* and other scientific journals in the same way, according to the individual beliefs of the writers. Currie of Philadelphia in his work on "The Origin of Yellow Fever," appearing in 1800, retorts in vigorous terms:

The doctrine of Mr Webster on this subject, notwithstanding his elaborate researches, appears still more exceptional, and to be as much the creature of the imagination as the tales of the fairies.

Webster received no profit from this work. It was a work of love, or rather, of conviction. In 1801 he wrote that he was some 700 or 800 dollars out of pocket on account of it, with all his previous expenses, his labor and his toil. Nevertheless, the work had a great influence in modifying the prevalent views on the contagious nature of yellow fever, and this was of great practical and humanitarian importance. During the first half of the nineteenth century, epidemics of yellow fever continued to occur in this country, and the controversy as to its origin still went on. Webster's

views were repeatedly quoted in connection with medical ones. His work was imitated, without any credit, by Bascom of England in "A History of Epidemic Pestilence," 1851, carrying the same method of investigation up to 1848. Much of this work and conclusions are taken bodily from Webster, but his name is not even mentioned. This work had the same fate in one way as the Spelling Book—it was frequently pirated without acknowledgment.

John W. Francis, in the *International Magazine*, February, 1852, said of Webster:

If with philologists he is deemed a man of merit, it may with equal justice be said that he is to be recognized by medical men as an author of importance for his "History of Pestilence."

Today we know that these early strivers for the truth were all wrong, that the intangible something in the atmosphere was a mosquito, *Stegomyia*, and the organisms of yellow fever carried by it and injected into the human beings bitten by it. The personal bitterness of their dispute, in their ignorance, appear pathetic to us today, as children crying in the dark. But it was all necessary as a phase in the slow, painful

evolution of human knowledge, and another generation will look on our own efforts in the same light.

Noah Webster was one of America's greatest men, measured by the vigor of his mentality, the manifold character of his interests, and the value of his achievements. His courage and his indomitable will should be an inspiration to every youth

of the present age. He lacks a sympathetic biographer, to throw about his life a literary atmosphere of appeal and suggestion. His great predecessor Johnson had his Boswell, and so attained immortality in literature. Webster remains today a name on a dictionary, known to every American but almost wholly unknown in the deeper significance of his life and work.

				DISEASES.		London	Pana.	Phil.
A.D.	Summer	Winter	Comets	Volcanoes				
1778	hot	mild			typhus fever, plague	Coillanuoople	10399	17113
1779	hot Eng	very severe			health		10410	17113
1780					bilious fever Philadelphia, general health	plague in Smyrna	10317	Salern
1781					influenza America		10317	Salern
1782	dry Amc		(me re)		influenza Europe	scarlatina began in Edinburgh	17918	17113
1783	hot	very severe	many	Heckla grt.	measles and scarlatina Amer	famin India, plague in Egypt &c	17918	17113
1784	hot		comet	Vefuvius	plague in the east	angina America, canine madnefs	17918	17113
1785	dry Euro	cold		Vefuvius	angina fevers America		18919	17113
1786	cool	cold			yellow fever Cadiz	angina America and England	18919	17113
1787	cool		(comet meteor)	Et & Vefu.	ague Barbary coast		18919	17113
1788	rainy Am	cold			measles began in York and Phila	codfish sickly influenza Eu	18919	17113
1789	cool furi	(severe Eur mild Amer)	halo	Vefuvius	famin in Afg	death in America, measles America and influ	18919	17113
1790	re hot A	cold			enza death of haddock Europe	plague in the east	18919	17113
1791	re hot A	cold			influenza America	(and Grenada)	18919	17113
1792	re hot A	cold			plague began in Egypt, bilious pestilence began in New York		18919	17113
1793	re hot A	cold			plague in Egypt	scarlet fever began in America	18919	17113
1794	re hot A	cold			scarlet fever Am and Eng	pestilence Phil, dysentery Maryland	18919	17113
1795	re hot A	cold			scarlatina pestilence New Haven and Baltimore	dysentery	18919	17113
1796	re hot A	cold			scia lunis	pestilence New York and Norfolk	18919	17113
1797	re hot A	cold			New Haven	influenza England	18919	17113
1798	re hot A	cold			scarlatina pestilence N York, Boston, Charleston Newbu		18919	17113
1799	re hot A	cold			report, measles America		18919	17113
1800	re hot A	cold			influenza Europe	pestilence Phil Baltu, Prov Norfolk and	18919	17113
1801	re hot A	cold			among cats and other animals in Turkey	canine madnefs	18919	17113
1802	re hot A	cold			pet. Phil N York Baltu N Lond Port Wilmung in Turkey		18919	17113
1803	re hot A	cold			pestilence Philadelphia, New York, Hartford		18919	17113

Fig 11.—Table from the 'History of Epidemic and Pestilential Diseases' illustrating Webster's method of correlating historical data concerning the coincidence of epidemic diseases and natural phenomena.

The Most Intelligent Animals—The chimpanzee is the most intelligent of all animals below man. He can learn more by training, and learn more easily than any other animal. The orang-utan is mentally next to the chimpanzee. The Indian elephant in mental capacity is third from man. The high class domestic horse is very wise and capable, but this is chiefly due to its long association with man. The wild horse mentally is a very different animal, and in intellectual scale ranks with the deer and antelopes. The lion is endowed with reasoning ability and judgment of a high order, its mind is surprisingly receptive. The grizzly bear is believed to be the wisest of all bears. The pack rat is the intellectual phenomenon of the great group of gnawing animals, and is in a class by itself. The white mountain goat seems to be the wisest of all the mountain summit animals whose habits are known. A high class dog is the animal that mentally is in closest touch with the mind, the feelings, and the impulses of man and is the only animal that can read a man's feelings from his eyes and his facial expression.—Hornaday, "The Minds and Manners of Wild Animals," *Scribners* 1922.

The device for the administration of the gas mixtures is the same in principle for all experiments on white mice, white rats, guinea-pigs, rabbits and kittens, and may be briefly described, with the aid of Figure 1

The animals placed in their respective bell jars, *F*, *G*, *H* and *I*, are sealed up by pieces of plate glass applied to the bases, these having been thickly smeared with petrolatum. Next, the pinch clamps *e*, *e'*, *f* and *f'* are removed from the rubber tubes *1*, *1*, *k* and *l* leading from the forked siphon (*a*), and water, which is kept at a constant level in the pressure bottle (*A*) by means of water forced into it through the tube (*b*) attached to the faucet (*z*), is allowed to flow into the 17 liter demijohns *B*, *C*, *D* and *E*, which contain the gases hydrogen, nitrogen, nitrous oxide and ethylene, mixed with the desired concentration of oxygen. Immediately the pinch clamps *g*, *g'*, *h* and *h'* are removed from the rubber tubes *m*, *n*, *o* and *p*, and the gas mixtures are delivered over into their respective 4 liter bell jars *F*, *G*, *H* and *I*, containing the animals used. The flow through the four branches of the forked siphon is kept constant by adjustment of the screw clamps (*c*) and (*c'*), and is easily judged by the relative level of the water in *B*, *C*, *D* and *E*. The gas mixtures, having been delivered over into *F*, *G*, *H* and *I*, at a constant rate, make exit through the glass tubes *d'*, *d'*, *d'''* and *d'''* fitted into the sides of the bell jars near their base.

In the work with frogs, wide mouthed bottles of 675 cc capacity were used. The gases in the desired percentage concentrations were introduced under water, the frogs being likewise introduced into their respective bottles, and these tightly corked.

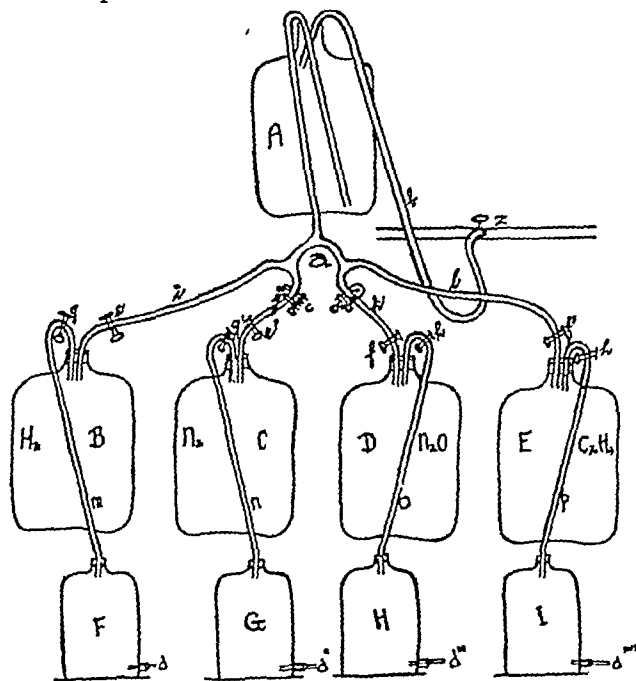


FIG. 1—Scheme employed in studying simultaneously the effect of a given concentration of hydrogen, nitrogen, nitrous oxide and ethylene on white mice, rats, guinea pigs, rabbits and kittens. Water siphoned from demijohn *A* displaced the various gases contained in *B*, *C*, *D* and *E* into *F*, *G*, *H* and *I* containing the animals.

Because of the fact that the method used for the smaller animals was wasteful, it was decided to employ a closed system for the work on dogs. The apparatus devised for this work, after considerable experimentation, may be briefly described, with the aid of Figure 2.

The dog's nose, having been closely shaved is inserted into the metal flask (*C*) which is covered by a strong rubber dam (*f'*) containing a circular opening (*z*) three-fourths inch in

diameter. The motor (*F*) when started, caused the pump (*E*) to circulate the gas contained in the 17 liter demijohn (*A*) successively through tubes *a*, *b*, *c* and *d* and back into *A*. *D* is a jar containing soda lime for the absorption of carbon dioxide. *B* is an ordinary basketball bladder, which takes care of any increase in pressure in the system when oxygen is added, and also functions as a manometer in indicating the decrease in pressure due to the oxygen used up, thereby

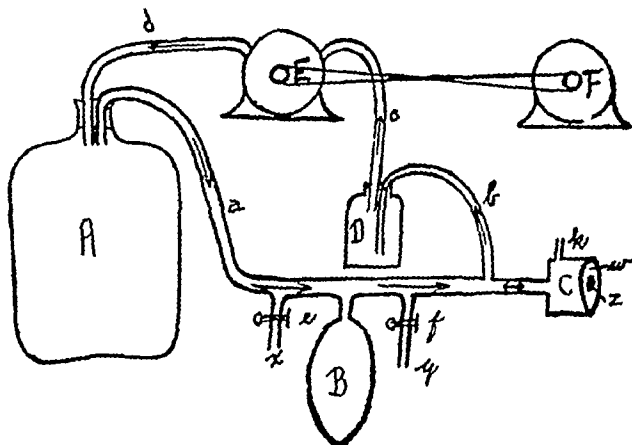


FIG. 2—Device used in studying on dogs the anesthetizing properties of ethylene. The electrically driven pump *E* circulated the ethylene (in *A*) and oxygen introduced at *x* through the connecting tubing and to *C* a mask for the dog's snout, the carbon dioxide being removed on passage of the circulating gas mixture through jar *D*, containing soda lime.

serving as a guide as to when more oxygen should be added. A rubber tube (*x*) closed by a pinch clamp (*e*) is led off from a T-tube to an oxygen tank, *y* is likewise a rubber tube, kept closed by a pinch clamp (*f*), and used for the purpose of removing 50 cc samples of the gas mixtures, during the experiment, for analysis. A small rubber tube (*h*) serves to connect the system with a tambour for respiratory tracings.

Small, young dogs, weighing from 4 to 8 kg, were used for these experiments. Just before the experiment, the animal was prepared for blood pressure tracings by insertion of a two-way cannula into the femoral artery under local anesthesia, a weak solution of procain being used to which 10 drops of epinephrin chlorid had been added. The experiments covered a period of from forty-five minutes to one hour.

RESULTS

The accompanying table contains the essential details of the pharmacologic effects of ethylene gas used in various concentrations on the different types of animals. In all experiments the effects of ethylene were compared simultaneously in the same concentration with two other irrespirable gases, hydrogen and nitrogen, as well as with nitrous oxide.

By 85, 90 or 95 per cent of a gas we mean that, in a given experimental mixture, 85, 90 or 95 parts of the mixture consisted of ethylene, hydrogen, nitrogen or nitrous oxide, and that the other 15, 10 or 5 parts consisted of oxygen. One hundred per cent indicates, of course, the pure gas (be it hydrogen, nitrogen, nitrous oxide or ethylene) without admixture with oxygen.

For the convenience of the reader, we point out some of the salient features of this table.

Frogs—In an 85 per cent mixture of the various gases, frogs were anesthetized after twenty minutes by ethylene. At that time the frogs in a similar concentration of hydrogen, nitrogen and nitrous oxide were practically normal. When 100 per cent of the various gases were used, ethylene anesthetized in four minutes, nitrous oxide in fifteen minutes,

hydrogen and nitrogen not at all *Ethylene, compared with nitrous oxid, anesthetizes frogs in approximately one-fourth the time* Recovery from the anesthetic (ethylene) is complete within two minutes

White Mice—In from 75 to 80 per cent mixture of ethylene, the animals are markedly depressed but not anesthetized. Animals in a similar percentage of nitrous oxid are practically normal except possibly for some evidence of excitement. Those in from 75 to 80 per cent hydrogen or nitrogen are normal. As the percentage of gas is increased (to 85 and 90 per cent), the animals in ethylene are anesthetized at a time (from twenty-two to thirty minutes) when those in nitrous oxid show only slight depression, and those in hydrogen and nitrogen show only a slightly increased respiration. With a 95 per cent mixture, ethylene anesthetizes in

in the other gases, including nitrous oxid, no depression was in evidence. With a 90 per cent mixture of ethylene, all animals were anesthetized in from ten to twenty minutes (extremes). Those in 90 per cent nitrous oxid were anesthetized in from twenty to forty minutes (extremes). Animals in the other irrespirable gases of hydrogen and nitrogen (90 per cent) were unaffected. In all animals anesthetized, recovery took place promptly within from one to three minutes.

From these experiments it appears that all of our animals (mice, rats, rabbits, guinea-pigs and kittens) could be anesthetized with a 90 per cent ethylene mixture in *one-half the time necessary to anesthetize the same animals with the same percentage of nitrous oxid*

EFFECTS OF ETHYLENE ON DIFFERENT TYPES OF ANIMALS

Animal	Concentration of Gas Used	No of Experiments Performed	Average Time of Experiment	Effects Observed			
				Hydrogen	Nitrogen	Nitrous Oxid	Ethylene
Frog	80%	2	30 min	Respiration fell from 108 to 63 seemed depressed	Respiration fell from 96 to 84 less depressed	Much less depressed than one in ethylene not anesthetized	More depressed than one in N O not anesthetized
	85%	5	30 min	Seemed normal through out not anesthetized	Quite normal through out not anesthetized	Practically normal not anesthetized	Anesthesia after 20 minutes recovered in 2 minutes
	100%	4	30 min	Gasping cyanosis depression not anesthetized	Less marked effects than H not anesthetized	Respiration depressed anesthesia after 15 minutes	Respiration depressed anesthesia after 4 minutes recovered in 2 minutes
White mouse	75%	2	1 hr	Normal	Normal	Normal	Marked depression not anesthetized
	80%	3	70 min	Normal	Normal	Some excitement no depression not anesthetized	Marked depression equilibrium disturbed not anesthetized
	85%	3	80 min	Slightly depressed after 1 hour not anesthetized	Normal	Slight respiratory difficulty near end not anesthetized	Light anesthesia after 30 minutes recovered in 3 minutes
	90%	6	100 min	Respiration increased slightly depressed slightly not anesthetized	Respiration increased slightly otherwise normal	Slightly depressed not anesthetized	Anesthesia after 22 to 30 minutes recovered in 1 minute
	95%	4		Anesthesia after 22 to 28 minutes	Anesthesia after 18 to 28 minutes	Anesthesia after 5 to 9 minutes maintained 10 minutes recovered in 1 minute	Anesthesia after 3 to 4 minutes maintained for 10 minutes recovered in 1 minute
White rat	85%	2	60 min	Normal	Normal	No depression not anesthetized	Slight depression not anesthetized
	90%	5	55 min	Normal	Normal	Slight depression not anesthetized	Anesthesia after 18 to 22 minutes recovered in 1 minute
	95%	4	50 min	Depressed after 40 minutes	Same as rat in hydrogen	Anesthesia after 30 to 35 minutes recovered in 2 minutes	Anesthesia after 7 to 12 minutes recovered in less than 2 minutes
Rabbit	85%	3	60 min	Normal	Normal	No depression not anesthetized	Slightly depressed not anesthetized
	90%	4	50 min	Normal	Normal	Anesthesia after 20 to 30 minutes recovered in 2 minutes	Anesthesia after 10 to 16 minutes recovered in 2 minutes respiration slow and regular
Guinea Pig	85%	3	50 min	Normal	Normal	No depression not anesthetized	Slight depression not anesthetized
	90%	5	50 min	Normal	Normal	Anesthesia after 30 to 40 minutes recovered in 1 minute	Anesthesia after 10 to 15 minutes recovered in 1 minute
Kitten	85%	2	50 min	Normal	Normal	No depression not anesthetized	Slight depression not anesthetized
	90%	6	50 min	Normal	Normal	Anesthesia after 30 to 35 minutes recovered in 3 minutes	Anesthesia after 10 to 20 minutes sat up after 1 minute walked after 2 minutes

* Anesthesia and analgesia were tested by strong pinches with hemostat introduced into bell jar through rubber dam

from three to four minutes, nitrous oxid in from five to eight minutes, nitrogen in from eighteen to twenty-eight (?), hydrogen in from twenty-two to twenty-eight (?) minutes. Recovery is complete within one minute after the animals are returned to the air.

Ethylene, compared with nitrous oxid anesthetizes white mice not only in lower concentration but in one-half the time

White Rats—Ethylene anesthetized these animals in from seven to twelve minutes when used in 95 per cent mixture. It took from thirty to thirty-five minutes to effect the same degree of anesthesia when nitrous oxid was used. In this concentration, nitrous oxid was only slightly more effective than nitrogen or hydrogen.

Rabbits, Guinea-Pigs and Kittens—In 85 per cent ethylene these species of mammals showed slight depression whereas

Results on Dogs—All arrangements having been made for blood pressure and respiratory tracings the dog's nose was carefully inserted into the mask the motor started and a demijohn of pure ethylene was introduced into the system. A small amount of oxygen was added at once, which quickly relieved all signs of asphyxia. Complete anesthesia was obtained in from two to five minutes the animal passing through an excitement stage (showing increased knee-jerk dilated pupils slightly increased respiratory rate but very little struggling) into a surgical stage with abolition of the knee, skin and light reflexes, retention of the cornea, complete muscular relaxation, and pin-point pupils. Oxygen was added to the system as needed, continuation of it this stage of anesthesia for a period of about thirty minutes.

of ethylene, but if the oxygen had been given too freely, or if it was desired to continue this stage beyond this period, it was necessary to introduce a fresh supply of ethylene. It was found that 17 liters of 90 per cent ethylene and 10 per cent oxygen, with proper administration of oxygen, served to continue this stage over a similar period. During the experiment, samples of the gas mixture were removed, and the percentage concentration of ethylene determined by absorption with bromin. This varied between 85 and 90 per cent for complete anesthesia, whereas, when the concentration fell to 80 per cent there was complete analgesia and absence of struggling, but no muscular relaxation. The pupil was dilated.

When the ethylene-oxygen mixture was replaced with air, the artery having been tied and the cannula removed, the dog wagged his tail in two minutes, walked in three minutes,

One animal was anesthetized for forty-five minutes, fifteen times during a period of three weeks, the results in each of these experiments being absolutely consistent with the others of the series. The animal always completely recovered in three minutes, romped and played within five minutes, and, up to date, has shown absolutely no signs of evil after-effects. The animal in question, being in a very emaciated condition at first, managed, with good feeding, to gain approximately 3 kg. in weight during the three weeks of experimentation.

Results on Man—On the basis of our experiences with ethylene reported above, it seemed desirable to investigate its analgesic and anesthetizing properties on the human subject. For such trials a larger supply of ethylene was necessary. After what seemed a fruitless search we were able to obtain the gas tanked by a commercial chemical company. The gas so obtained proved to be as pure as quoted, and we proceeded

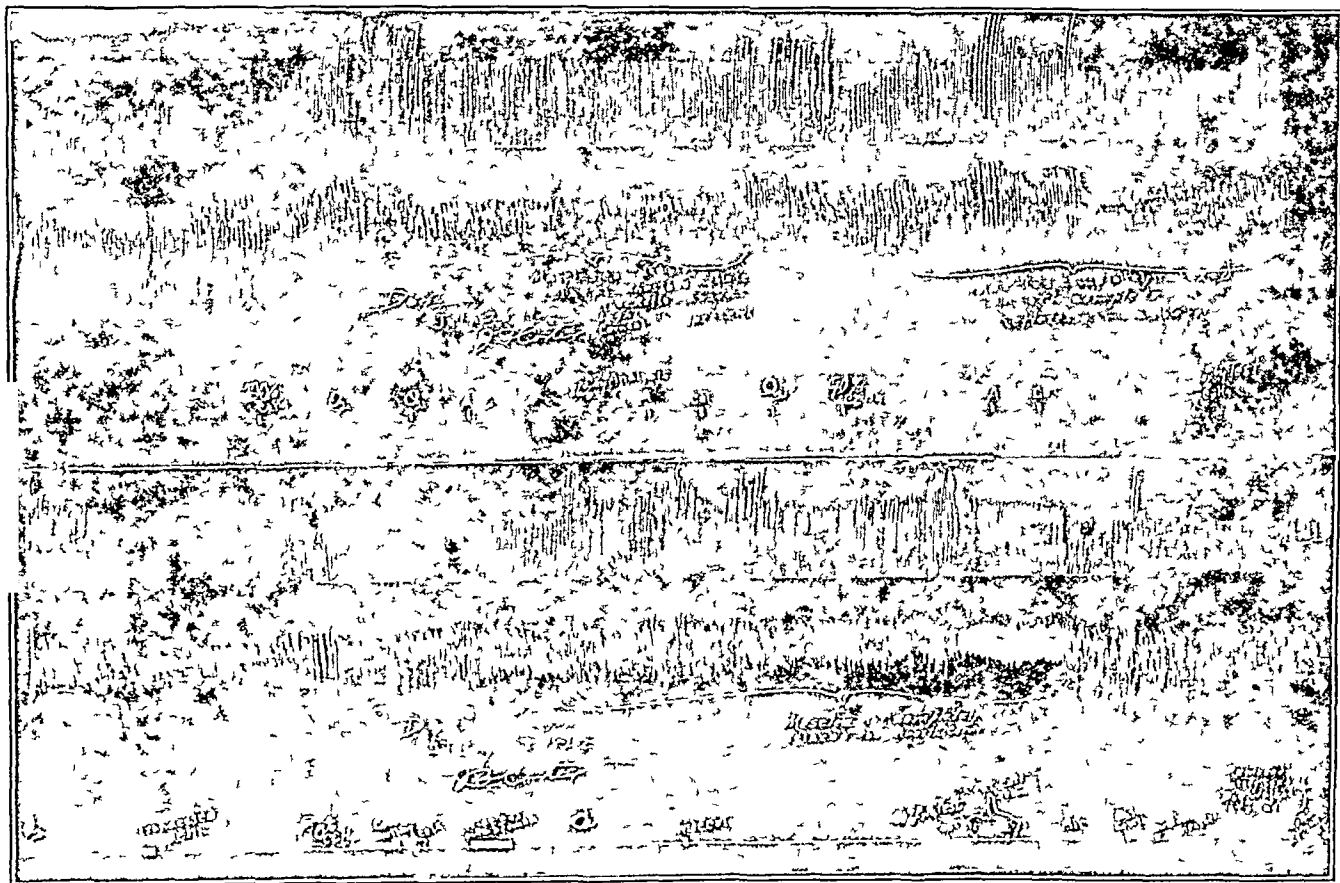


Fig. 3—Effects of ethylene on blood pressure and respiration. A analgesia.

and showed no signs of evil after-effects, except slight salivation if a high concentration of ethylene had been maintained throughout the experiment. The analgesia usually lasted for two minutes after removal of the animal from the ethylene-oxygen system.

During some of these acute experiments, wide cuts were made all over the abdomen, with considerable traumatization of tissue. These procedures give rise to no muscular contractions or to reflex effects on the blood pressure or respiration. Although a laparotomy would have been a simple matter owing to the complete muscular relaxation, this was not done because of the fact that it was not desired to have the animal recover. In the case of all animals traumatized but allowed to recover, all wounds were previously bathed in a 4 per cent solution of procain and the animals showed no signs of discomfort during the few minutes they were permitted to live.

Besides the seven acute experiments, six other experiments were performed in which all observations were duplicated except those on blood pressure and respiration.

to test out its properties in combination with oxygen on ourselves, using a Clark gas apparatus and appliances for its administration. We append briefly our experiences to date with it.

EXPERIMENT 1—J. B. Carter, reclining, Jan. 21, 1923, held the mask to the face with one hand and held up the other arm. He was given gas plentifully mixed with oxygen until the extended arm wavered. Administration was discontinued. Just enough was given to give a sense of well-being and exhilaration. At no time was there change in the color of the face.

EXPERIMENT 2—A. B. Luckhardt reclined and held the mask and extended the arm as did Mr. Carter. Mr. Carter gave the gas mixture. The arm soon wavered and dropped (in less than one minute). There were no asphyxial sensations. There was a sense of contentment and well-being. There was no apprehension of possible danger. Everything seemed well. Pains from an infected and active frontal sinus infection left. The subject was satisfied to lie there under the influence of the gas for all time. He did not think that con-

sciousness was completely lost at any time. He came out rather rapidly from a half sleep with slight incoordination of gait lasting a few minutes.

EXPERIMENT 3—The authors having thus tried out on themselves the immediate effects of the gas, the following subjects volunteered and were more or less deeply anesthetized.

(a) A J Carlson. After a minute or less the extended arm fell awkwardly and laterally against the wall with a thud. The subject was quiet throughout. Administration of the pure gas with occasional oxygen inhalations continued for three or four minutes. The subject thinks he was conscious throughout but felt extremely comfortable. He came to after a minute or so. He states that he was slightly nauseated for several hours after.

(b) J Blumenstock. The arm dropped, he laughed a good deal at the start. This subsided. He seemed completely anesthetized. The skin of the arm was lifted up and a blunt-pointed safety pin pushed through without any indication on the part of the subject of having felt it. He was kept under for three or four minutes. The experiment was repeated later in the morning.

(c) Archer C Sudan, N Klermann and K. Phillips were similarly anesthetized far past the stage of analgesia, for in two (N K and A C S) the safety pin was pushed through the skin without provoking reflex movement of the arm, much less sensation of pain in the subjects. A C S laughed a great deal before complete anesthetization. On recovery, he talked excitedly and incoherently of his experience. Only after several minutes did his speech assume a logical tendency. He had no recollection whatever of having had the blunt safety pin thrust through the skin of his forearm. N K, while recovering from the anesthetic but while still dazed, vomited up a large breakfast taken several hours previously. He likewise had no recollection of having vomited. Nausea was not experienced, and the subject ate a hearty dinner within an hour.

(d) J B Carter and A P Luckhardt served alternately as subjects for two further attempts, being anesthetized by each other far past the stage of analgesia. Neither felt nauseated except for possibly slight abdominal discomfort for several minutes after recovery, the latter always being prompt and complete except for slight weakness and unsteadiness of gait immediately on getting up from the couch. A B L desired to turn over on his side and go to sleep. J B C went through a period of excitement in coming out of the anesthesia so that restraint by holding down the extremities was found necessary.

January 28, A B Luckhardt and J B Carter were in complete surgical anesthesia. The former was anesthetized for fully ten minutes, during which time he was pinched in the ear and the upper right arm. The soles of his feet were beaten with a Stillson wrench. Of none of these procedures had he any recollection. In the course of the following week a large 'black and blue' area developed on the upper arm at the place of greatest injury. In addition to such observations on ourselves, we anesthetized lightly and for a short period of time (about five minutes) several other volunteers. Carl Johnson, T Boyd and G Turner. Mr Johnson arose from the couch a little pale and slightly nauseated. Mr Boyd was slightly nauseated, but this discomfort left within the next hour while he was about working in the laboratory. G Turner passed through a period of excitement during recovery from the anesthetic.

February 4, A B Luckhardt was again anesthetized by J B Carter for a short period, with Drs Eugene Cary and Dallas B Phemister, surgeons making observations. In turns, Drs Phemister and Cary were themselves anesthetized; the former only very lightly, the latter until deep surgical anesthesia was attained. Thereafter, A B Luckhardt anesthetized J B Carter for a period of fifteen minutes the longest anesthesia in time and depth so far maintained in man. Although all had taken large breakfasts, none experienced anything but a transient nausea.

In all, then, we have anesthetized, more or less deeply, twelve subjects. One of the authors (A B L) was anesthetized six times in three days in three weeks,

the other (J B C), seven times on the three days in three weeks. In neither of us did sugar or albumin appear in the urine as a result of the experiences, nor did we experience any other evil after-effects except for a slight nausea and loss of appetite, both of very temporary nature.

SUMMARY

The following summary is warranted on the basis of these experiments.

1 Deep surgical anesthesia can be rapidly induced by ethylene without any sense of asphyxia, but, on the contrary, with a sense of well-being and comfort.

2 Analgesia comes on early apparently long before complete surgical anesthesia is established.

3 At a time when there is complete muscular flaccidity, the pulse rate is slightly decreased, if changed at all, respirations are slow but regular, and the countenance normal in color for the individual, or slightly paler. No cyanosis was ever observed. No subject ever showed any sign even suggestive of asphyxia.

4 The induction of anesthesia was in no way unpleasant except possibly for the first few inhalations of the concentrated gas, which induced reflex swallowing. A period of excitement characterized by laughing or forced movement preceded the anesthesia in some. In others, such signs were absent during induction, but were in evidence as the person recovered from the anesthesia.

5 Recovery from the anesthesia was always rapid on withdrawal of the gas mixture. In all, slight weakness and a sense of fatigue was experienced if the person arose from the couch almost immediately on waking up. Vomiting occurred in one early during recovery. In some, slight epigastric distress was experienced temporarily. In others, a slight nausea persisted for several hours after the administration of the gas. In none was nausea so pronounced or so prolonged as to interfere with the ingestion of the next meal.

ADVANTAGES

The possible advantages of ethylene over nitrous oxide, if used for human anesthesia, are:

1 Anesthesia may be maintained.

(a) In the absence of all signs of asphyxia.

(b) In the absence of effects on blood pressure.

(c) In the absence of dyspnea.

(d) With complete muscular relaxation.

2 It may be used in obstetrics, a state of complete analgesia being possible at a concentration of 80 per cent ethylene.

3 There is rapid recovery after long continued administration, without evidence of after-effects.

These advantages would make possible its use in many persons and conditions in which nitrous oxide is specifically contraindicated, such as in children, in diabetic patients, in old age, in advanced arteriosclerosis, in high cerebral pressure, in operations on the brain, in major operations, and in obstetrics.

COMMENT

The phenomena produced by the undiluted gas are, in fact, partly asphyxial, but this factor can be removed by the addition of oxygen, when it is seen that the results from the ethylene itself. This is shown in frogs, which preserve their reflexes for 15 minutes when placed in pure hydrogen, but lose them when placed in pure

Evidently the ethylene has a direct action on the central nervous system, a concentration of 90 per cent maintaining the higher centers in a state of insensibility, after this has been induced by a higher concentration. This fact was first apparent in experiments on frogs, in which it was found that these animals could live in 85 per cent illuminating gas for thirty minutes without showing any marked symptoms, whereas, when placed in a like concentration of ethylene they became completely anesthetic in twenty minutes. The motor reflexes are also abolished if a concentration of 90 per cent is maintained after anesthesia has been induced.

There is no marked stimulation or depression of the vagus center, there being an increase in the heart rate during induction (excitement of animal), but a rapid return of this to practically normal later in the procedure. The vasomotor center remains undisturbed, except for a slight asphyxial depression during the beginning of induction, the blood pressure being practically the same at the end of a forty-five minute period of anesthesia as at the beginning. The respiratory center, likewise, is not affected in the absence of asphyxia, this fact being quite noticeable in the experiments on all the animals. Stimulation of the vomiting center sometimes occurs, during recovery, but was never observed during the induction of anesthesia, although several dogs were used soon after being fed.

Relaxation of the sphincters does not occur during the period of the anesthesia, but defecation and micturition take place immediately on recovery, in the case of the dog.

It is worthy of note that, with a small variation in the time required to produce anesthesia, the same concentration of gas can be used in the case of all animals used, and when this condition of anesthesia is induced it can be maintained practically indefinitely.

It is a well known fact that ethylene is readily oxidized in vitro to carbon dioxide by the use of an aqueous solution of chromic acid.¹⁰ We have strong indications that ethylene is oxidized in vivo just as is alcohol, but this has not been definitely established.

So far we have not tried the anesthetic for minor or major surgical work. This we intend to do in the near future, using it, of course, cautiously and for only short periods of time. We recall that one dog was anesthetized for forty-five minutes fifteen times in the course of three weeks without our observing any untoward symptoms. We have been under the influence of ethylene two and three times on a given day for three consecutive Sundays. No late or evil effects were in evidence. We are therefore inclined to the view that the gas is relatively innocuous. However, we intend at an early date to determine whether a prolonged anesthetization (for two or more hours) produces in dogs any marked functional or histologic changes in the various organs of the body.

All experiences to date, involving many types of animals and including man himself, indicate that ethylene is a gas anesthetic of considerable merit, in fact, more desirable than nitrous oxide not only because of the ease of its administration but because of the several important points referred to and enumerated above.

CONCLUSION

This must be considered as a preliminary report of experimental work which has not been carried far

enough to warrant general clinical use. We reserve for further study and experimentation in the clinic and laboratory the many problems which the study of the gas has suggested.

In conclusion, we desire to acknowledge our indebtedness to Prof. Fred C. Koch, whose advice and help in the preparation of pure ethylene was of the greatest importance in this research, as well as to Mr. George Turner for his willing help in the conduct of some of the experiments on dogs.

Clinical Notes, Suggestions, and New Instruments

TRAUMATIC FAT NECROSIS OF THE BREAST

IRA COHEN, M.D., NEW YORK

The attention of physicians was directed to traumatic fat necrosis of the breast by Lee and Adair¹ in 1920, and again in 1922. Clinically, these tumors present many features commonly associated with carcinoma. They are hard, they may be fixed to the skin or deeper structures, there may be retraction of the nipple and enlarged axillary lymph nodes. Two characteristics which have to date constantly been described in all cases are the history of trauma and the corpulence of the patient. A certain number of malignant tumors, variously estimated at from 3 to 39 per cent, give a distinct traumatic history, so that there is nothing pathognomonic of traumatic fat necrosis except the histologic picture.

The nature of the trauma as the etiologic factor in this case of breast tumor is the reason for this report.

REPORT OF CASE

Mrs. S. H., aged 35, was referred because of a tumor in the left breast which had been present four weeks. In the history the only point bearing any relation to the present complaint was that she had been under treatment for hypertension, and suffered with palpitation and precordial pains. She had had seven pregnancies, one of which resulted in a stillbirth after a difficult labor, and one a miscarriage. The youngest child was 3 years old. She nursed all her children, and never had had any trouble with her breasts till the present illness.

About five weeks prior to the time I saw her, she had an attack of severe palpitation and precordial distress, for which she applied an ice bag to the precordium. This bag was unprotected, and was allowed to remain practically in the one place for two hours. The following day she noted a burning sensation in the entire mesial half of the breast, which continued for forty-eight hours. On the second day the breast was red, on the third day the burning was replaced by pain, dull and inconstant in character, and localized in the lower mesial quadrant. Here on the fifth day a small nodule appeared. The nodule itself was not especially tender, but the skin overlying it was sensitive. About this time the pain entirely disappeared, to return the following week, and then remained with varying intensity throughout the illness. The small nodule slowly increased in size for three weeks, and then remained stationary.

The patient was an obese woman, she weighed 150 pounds (68 kg.), which was much too great for her height, with large breasts. In the mesial lower quadrant of the left breast was a tumor approximately 4 by 3 by 2 cm., which was hard and very irregular in contour, seemingly composed, at least in part, of many pea-size nodules. It was attached to the skin but not to the deeper structures. It was not sensitive. There were two axillary nodes to be felt, but one could also be felt in the opposite axilla. There was no retraction of the nipple.

In spite of the hardness and the skin attachment, the tumor did not impress me as malignant. I did not, however, at

¹⁰ Norris, *Organic Chemistry*, New York, McGraw-Hill, 1912, pp. 43-5.

¹ Lee, B. J., and Adair, F. E., *Ann. Surg.* 72: 188 (Aug.) 1920; *Surg., Gynec. & Obst.* 34: 21 (April) 1922.

that time lay any stress on the history, but believed that the patient's attention had been directed to the breast because of the ice bag, and that we were dealing with a fibro-adenoma. Local excision was advised, with pathologic examination of the excised tumor to determine any subsequent procedure.

Under local anesthesia the tumor was excised. Grossly, it was not encapsulated, nor did it resemble on section any malignant or benign tumor that I had seen. It was made up of many nodules of fatty tissue, different in appearance from breast fat. In the histologic report Dr S. H. Geist stated that the specimen showed small areas of fatty necrosis containing numerous giant cells, and that the lesion was probably due to some traumatic process.

COMMENT

To the two cases following direct blows and the three following hypodermoclysis may be added freezing from the prolonged application of an ice bag as an etiologic factor in producing a fat necrosis tumor of the breast.

Given a traumatic history in a corpulent patient with a breast tumor, the possibility of the benign nature of the growth should be kept in mind.

178 East Seventieth Street

PERFORATED ULCER REPORT OF A CASE

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The perforation of a gastric ulcer in a physician's office is sufficiently impressive to cause some speculation. It is natural to inquire, in such a case, whether or not any part of the diagnostic procedure was responsible. I have wondered especially whether there could be any hazard connected with the manipulation of the barium-filled stomach behind the fluoroscopic screen.

It has long been taught that the palpation of a stomach suspected of ulcer should be done with the utmost gentleness. For instance Aaron¹ says: "The epigastric pain is increased on pressure. Regarding the inadvisability of exerting much pressure in testing the sensibility at this spot, Brinton advises caution with respect to the pressure test, not only must it be applied with great care and delicacy in the first examination of a supposed case of gastric ulcer, but, as a rule, we can scarcely be too reluctant to repeat it. Its effects are sometimes so injurious that it is necessary strictly to prohibit the patient from all manipulations of the epigastric region, as well as from all pressure produced by dress or work."

Yet it is true that the roentgenologists find it necessary to use deep pressure and massage in fluoroscopy, and that their manipulations are at times rather vigorous.

REPORT OF CASE

A man aged 54, gave a history, pointing to ulcer, characterized by attacks only in the spring, for fourteen years. There was occult blood in the stool on a bloodless diet, and occult blood in the stomach contents, with 60 per cent hemoglobin. The total acidity of the stomach contents was 66, with yeast cells present. The roentgen-ray examination revealed, on the greater curvature of the stomach, a constant spastic contracture present on the fluoroscopic screen and in the roentgenograms. The latter did not show the duodenal cap, but it was present on the screen and was normal in contour. There were no marked irregularities of the stomach outline other than that mentioned on the greater curvature, the diagnosis was ulcer of the prepyloric region of the stomach.

There was no six hour residue. After the roentgen-ray examination, the patient went home with a friend and ate a little bread and milk. In seven hours he was back in the office to hear the conclusions in the case. As we were talking, he was seized with a sudden severe pain in the abdomen and became very pale, and began to sweat. He was moved to a hospital, where a surgeon performed a laparotomy. There was a large perforation where the roentgenologist had located the ulcer. For six days he did very well, but on the seventh grew suddenly worse and died.

¹ Aaron, C. D. Diseases of the Digestive Organs. Philadelphia: Lea & Febiger, 1921.

Special Articles

THE ESCANABA HYPERPYREXIA

REPORT OF A SPECIAL INVESTIGATION

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[NOTE.—The case of alleged hyperpyrexia in Escanaba, Mich., created such nation-wide interest through the sensational publicity in the press that THE JOURNAL concluded that it would be desirable that the facts be known. Arrangements were made therefore, for an investigation, a report of which follows.—Ed.]

Our investigation of the case of Evelyn Lyons resulted in a diagnosis of malingering by an hysterical woman, with the usual background of conscious and subconscious motives and with no feature of exceptional nature that would warrant devoting to it any particularly serious attention had it not been for an extraordinary notoriety given it by the press. On our arrival in Escanaba we located Dr. Harry C. Defnet, the attending physician, at St. Francis' Hospital. We first secured the past history of the patient, which was long and varied.

She had at one time or another consulted nearly every physician in Escanaba, and several in other localities, including Chicago, where she had left her thyroid gland. Another physician had removed her appendix. Dr. Defnet and other physicians in Escanaba recounted episodes in which she had figured, that savored strongly of hysteria and malingering. At one time Dr. Defnet had been called on to remove from the bladder a fragment of rubber tubing which she had inserted in an alleged attempt to catheterize herself. During her sojourn in the St. Francis Hospital for this minor operation she had acted emotionally and capriciously, causing great annoyance to the sisters, with whom she was *persona non grata* at the time of the investigation.

During the period of time in which, according to the reports in the press, she had the remarkably high fever (from 108 to 114 F.), she had repeatedly spurned medical advice. It had not been possible to make her go to bed at home or to get her into the hospital until on one occasion the civil authorities were invoked and she had to be conveyed thither in a patrol wagon. She had then remained at the hospital for but two days and a half, when she walked out of her own volition. On the Sunday of her arrival there a temperature of 101.4 F. was recorded, but for the next two days the temperature and pulse records, as taken by the nurses, were normal. At that time the readings observed by her physicians were regularly high.

The patient had had some experience in nursing and had a smattering of medical knowledge. She was involved in legal proceedings over a broken love affair at the time of this visit. All in all, the past history bristled with evidences of abnormal emotional behavior of the type which we associate in our minds with the words hysteria and malingering. In fact, so strong was the presumptive evidence of fraud that it was really almost unnecessary to investigate. During the twenty-four investigation, she had "carried

manner, had been given large doses of morphin without the slightest visible effects and had been catheterized at times. Dr. Defnet stated to the investigators that her temperature had been recorded at 118 F at 7 a. m., March 11, and that it seemed unlikely that she would live through the day.

The investigation now proceeded to the patient's home, where the investigators asked Dr. Defnet to catheterize her again and provided him with a pint vacuum bottle into which to deliver the urine. The temperature of the urine in the vacuum bottle was then read by means of two chemical thermometers of known accuracy, both registering between 36.8 and 37 C (98.4 to 98.6 F). One of the observers now placed an ordinary clinical thermometer in the usual way in the patient's mouth and left the patient to her own devices. She sent the mercury up to 109 F, or as far as it would go in this thermometer. One of the large chemical thermometers with the bulb in the axilla registered 36.8 C, apparently without her knowledge that a second instrument was being used. Thus, obviously, she had manipulated the mouth thermometer.

The patient was now informed that the physicians were acquainted with her deception. She replied with a storm of protest and a refusal to cooperate further in the investigation. Nevertheless, the investigators persisted and endeavored to secure a reading with a thermometer in the patient's mouth, under actual observation. She attempted repeatedly to remove the thermometer, taking it from her mouth and holding it upside down while arguing with the observers, moving it wildly around in her hand, voicing her fears that she might break it, etc., indeed, Dr. Defnet stated that she had thus broken several thermometers. Finally she was induced to submit to a mouth reading and the result was normal. The patient was again asked as to her method of deception but again refused to submit any information. The physicians arranged therefore to duplicate the second test made, this time, however, keeping the patient, unaware that she was being watched, under actual observation. When left alone with the clinical thermometer in her mouth, she removed it, read it rapidly, arched her body and placed her hands under the bed coverings. She then returned it to her mouth, and when the physicians entered the room it was found that the mercury column had ascended to the top of the tube. One of the investigators then demanded that she produce the hot water bottle. She sat up in bed, searched wildly among the coverings and mattresses, and finally produced a small very hot, hot water bottle. The patient's mother stated that she had regularly kept the bottle filled for her since she complained of pains in the back and abdomen.

If from the medical standpoint there was aught to be said—and in view of the fact that so many physicians who saw her failed to make a correct diagnosis, something should be said—it would be (1) that it is highly important in such cases to elicit and write down a complete clinical history, (2) that it is well to know that when large doses of morphin fail to affect a pain in the slightest degree the 'pain' may be spurious. It is important to realize (3) that when a patient appears to be suffering from some very grave symptoms, but still behaves in a casual manner and refuses to go where the condition can be investigated and treated effectively, a discrepancy exists which requires explanation—a discrepancy between the gravity of the alleged condition and the mental attitude of the patient toward it. Finally,

(4) symptoms so extraordinary as the alleged symptoms were in this case should be very thoroughly investigated before they are given publicity.

THE CARE AND FEEDING OF INFANTS

(Continued from page 695)

[NOTE.—This is the eleventh of a series of articles on the care and feeding of infants. It is addressed to the general practitioner rather than to the pediatric specialist. When completed, the series, somewhat elaborated, will be reprinted in book form.—Ed.]

PRINCIPLES GOVERNING THE PREPARATION OF MILK MIXTURES

So far as it has been developed by the scientific knowledge of the present day, the basis to be recommended for the artificial feeding of average normal infants is the unit requirements in fat, protein, carbohydrate, salts, water and accessory food factors per pound or kilogram of body weight.

It is therefore evident that there must be a rational understanding of the infant's digestive and metabolic processes as concerns the individual ingredients of his diet, and that the quantitative relationship of the individual components of the diet to these physiologic processes must be duly considered. It soon becomes evident that while in many instances one or more of the food elements may cause digestive disturbance, poorly balanced combinations of these elements have a far greater influence on its development. If all the ingredients are in excess, it may cause a general upset to develop rapidly, but the insufficiency of one or more of the ingredients usually results in the more chronic type of nutritional disturbances. One of the best illustrations of the latter type is seen when proper quantities of fat and protein are fed but the carbohydrates are insufficient. A similar but less constant picture presents itself when fat is insufficient in an otherwise well balanced diet.

It is therefore necessary to consider, first, the fundamental principles governing nutrition, basing these on knowledge not only of the digestion, absorption and later metabolism of the individual food elements, but also of their relative action. It must also be remembered that an improperly constituted diet reacts on both the quantity and quality of the digestive secretions, affords pathogenic bacterial flora a suitable medium in which to develop, and accelerates or delays the intestinal reaction, having thus a direct effect on the infant's development.

While the chemical composition of the diet must be most carefully considered, its quality, as regards its freshness and purity, is equally important. Therefore, in providing a suitable food, its source, subsequent handling and finally its proper modification must be supervised. A study of the literature arising during the last half century, concerning the many theories and methods advanced for the feeding of infants, emphasizes that *no substitute has been found for human milk*.

When an infant is fed on food not primarily intended for its use, attempts at adaptation must be made, and their number as mentioned in the literature shows conclusively that no single method can possibly meet all demands.

Realizing that rigid dogmatism will ultimately lead to confusion, it is our object here to formulate prin-

ciples of feeding which are adaptable to the majority of well babies and will allow for their physiologic development. The discussion of the feeding of sick infants will be considered later. Such principles, to be worthy of recommendation, must permit of elasticity in the administration of individual ingredients and must be based on our present knowledge of the needs of the body for growth and development. *It is to be remembered that the diets to be recommended, although meeting the requirements of most infants, will be excessive for some and inadequate for others. Infants differ in their use of the food administered.*

In formulating a scientific basis for infant feeding, we must recognize that at present no hard and fast rules can be laid down for clinical application. Our present methods are still more or less empiric, and the result is dependent to a considerable degree on the wide range of food tolerance of the healthy infant. Hence in order to insure success the physician must depend on his own clinical observations.

The needs of the normal breast-fed infant are well known. The breast-fed infant taking $2\frac{1}{2}$ ounces of milk per pound of body weight receives fat, 26, protein, 11, and carbohydrate, 5 gm, daily for each pound of weight. So long as he receives daily $2\frac{1}{2}$ ounces of breast milk per pound of his body weight, it matters little to him whether he is given frequent feedings of small amounts or the more desirable larger individual feedings at longer intervals.

It should be emphasized that the needs of the artificially fed infant for the various food elements must be interpreted on the same basis of unit requirements per pound or kilogram of body weight. If the adoption of this method were to secure no other result than to cause a collection of facts from the various clinics for comparative study, it will have served a good purpose.

In the past, percentages of the food elements in their relation to the total milk mixture have been used, orders being written for two-thirds milk mixture, plus 5 per cent carbohydrate, or a mixture containing fat, 2 per cent, protein, 1 per cent, and carbohydrates, 6 per cent, etc. This, more than any other method, has led to the many so-called schools of infant feeding and possible misinterpretation of end-results. In our present consideration of the infant's food requirements, his needs in fat, protein, carbohydrates, salts and water will be discussed with regard to each pound or kilogram of body weight, secondary emphasis being given to the percentages in the mixture. The German schools of pediatrics were the first to emphasize the caloric requirements of the infant and to make use of these as a basis for calculating food supply. This led in many instances to unbalanced diets, because heat units were thought of rather than food elements. The caloric content of the diet will be considered, therefore, chiefly as constituting a check on overfeeding and underfeeding as a whole and not as a basis for constructing diets.

The question presenting itself to the practitioner is this: Can this principle be practically applied in every-day infant feeding?

Every formula with which feeding is begun should be looked on as experimental, and the reaction of the infant to this feeding should be carefully studied.

If these principles are borne in mind, many an obstacle to successful infant feeding will be overcome.

The attempts toward ultra-refinement of the infant's diet have led to considerable confusion because of the

different conclusions of the various schools. Eventually infant feeding will be placed on a thoroughly scientific basis. This, however, does not answer the present-day needs, *which call for a safe and practical solution of the feeding problem for the every-day baby in every-day life.* Feeding advice commonly comes from food manufacturers, and if one preparation is not successful a rapid transition is made from one proprietary baby food to another, with untold detriment to the infant. In clinical experience, the rules advocated for feeding the normal healthy infant on *simple milk mixtures with carbohydrates added*, with further suggestions for the underfed, have been found safe for the baby and practical for the physician, which latter is to be neither overlooked nor taken lightly.

DATA AS TO FOOD AND FOOD REQUIREMENTS USED AS A BASIS FOR ESTIMATING THE DIET OF INFANTS

Average cow's milk contains the percentages given in Table 14

TABLE 14—CONTENT OF COW'S MILK

	Per Cent.
Fat	4.0
Protein	3.5
Carbohydrates	4.5
Calcium oxid	0.172

TABLE 15—GRAMS OF FOOD ELEMENTS NEEDED AS A
MINIMUM IN TWENTY-FOUR HOURS BY THE
AVERAGE NORMAL ARTIFICIALLY
FED INFANT

	Per Pound	Per Kilogram
Fat	18	40
Protein	15	35
Carbohydrates	50	110
Calcium oxid	0.08	0.17
Water	900	2000

The grams of food elements needed as a minimum in twenty-four hours by the average normal artificially fed infant are given in Table 15. The milk or cream and skim milk needed to supply fat and protein will average 2 gm of sugar. It will therefore be necessary to add the amount needed in excess of this, one-tenth ounce (3 gm) per pound, or 66 gm per kilogram.

For each gram of food elements in the mixture, the ingredients listed in Table 16 must be added.

TABLE 16—INGREDIENTS TO BE ADDED FOR EACH GRAM
OF FOOD ELEMENTS

Fat	$\frac{2}{10}$ oz. or 6 c.c. of cream
Protein	$\frac{5}{10}$ oz. or 25 c.c. of milk
Carbohydrates	1 oz. or 30 c.c. of milk or skim milk
Calcium oxid	$\frac{1}{40}$ oz. or 1 gm. of sugar
	18.5 oz. or 600 c.c. of milk or skim milk

TABLE 17—REQUIREMENTS FOR EACH POUND OF
BODY WEIGHT

Fat (18 gm)	$1\frac{1}{2}$ oz. or 45 c.c. of milk
Protein (15 gm)	$1\frac{1}{2}$ oz. or 45 c.c. of milk or skim milk
Carbohydrates (50 gm)	10 oz. or 3 gm. of sugar
Calcium oxid (0.08 gm)	$1\frac{1}{2}$ oz. or 45 c.c. of milk or skim milk

TABLE 18—REQUIREMENTS FOR EACH KILOGRAM OF
BODY WEIGHT *

Fat (40 gm)	25 c.c. of cream	100 c.c. of milk
Protein (35 gm)	100 c.c. (of milk or skim milk)	
Carbohydrates (110 gm)	66 gm. of sugar	
Calcium oxid (0.172 gm)	100 c.c.	

* No allowance made for protein in cream. Protein figured cent in milk.

(To be continued)

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SATURDAY, MARCH 17, 1923

SOME LIMITATIONS OF ALKALI THERAPY

Aside from their somewhat indefinite employment in the treatment of a variety of unrelated "minor ills," alkalis have found a more extensive and rational application in the treatment of so-called acidosis and in gastric ulcer. The use of sodium bicarbonate to avert the disastrous effects of an impending coma in diabetes has often been attended with almost dramatic results in the direction of improvement. The doses have sometimes been very large, amounting to 30 or 40 grams a day.

Among the practitioners in this field, there has latterly been a marked change of sentiment. Joslin¹ of Boston, for example, who was formerly an advocate of alkali therapy, now frankly states that, although a diabetic patient theoretically needs alkali, the dangers attendant on its use in the treatment of the acid intoxication far outweigh the advantages. Specifically, he points to the possibility that the administration of alkalis over long periods may deplete the body salts, such as chlorids, which are distinctly useful. Another danger from the use of alkalis is the occurrence of nausea and vomiting, and this is real, though greatly lessened when chalk is combined with the sodium bicarbonate. When alkalis are given, large quantities of urine must be voided to remove the salts of the acid. The quantity of liquid that must be ingested is so large as to overburden the stomach, and the excretion of so much acid frequently overwhelms the kidneys, and they cease to act.

Alkali therapy has also found widespread favor in the treatment of peptic ulcer. The chronicity of the disease is so often ascribed to the irritant action of the gastric acid that the neutralization of the latter presents a rational aspect. To promote the healing process, sodium bicarbonate, calcium carbonate, magnesium oxide and bismuth subcarbonate have been used. In many instances such treatment, as the frequent successes reported in THE JOURNAL attest, has been

decidedly favorable.² Hardt and Rivers³ have called attention to groups of cases in which symptoms of intoxication arise under alkali treatment. Patients with duodenal ulcer treated by the Sippy method may develop definite symptoms of toxemia associated with renal changes, increased blood urea, and normal or increased carbon dioxide combining power of the plasma. The gastric acidity during the period of toxemia is usually normal, or there is hyperacidity. When ulcer and renal complications are simultaneously present at the start, these toxic manifestations are more likely to appear and develop to a greater degree. Possibly the outcome is an expression of the as yet ill defined complex termed alkalosis. At any rate, whatever the upset which leads to untoward effects may be, therapy is likely to progress more satisfactorily when its limitations in any direction are better appreciated.

OLD THEORIES AND NEW FACTS REGARDING THE TETANY DUE TO PARA- THYROIDECTOMY

Tetany is a symptom with which the clinician is not infrequently called on to deal. It is, furthermore, a phenomenon that can be produced experimentally in animals through surgical extirpation of the parathyroid glands. This fact has made it more easy to study the pathogenesis of tetany in order to secure directive clues with respect to effective treatment and prevention. The investigations have consequently resolved themselves largely into a consideration of the functions of the parathyroid glands. A recent writer has summarized the unsatisfactory state of present-day knowledge by pointing out the three foremost theories now being debated, namely, that the parathyroids control the metabolism of guanidin and by so doing regulate the tonus of the muscles, that they regulate the metabolism of calcium, that they are involved in the acid-base equilibrium of the body, so that their removal may cause alkalosis. The parathyroids have also been alleged to control the metabolism of sugar to some extent.

The significance of these theories has been reviewed from time to time in THE JOURNAL. Within the last year, evidence collected by various methods in several laboratories has seemed destined to bring the problem of parathyroid tetany somewhat nearer to a solution. At the University of Chicago, Dragstedt⁴ has observed that completely thyroparathyroidectomized dogs could be kept alive, at least for a year, by diets containing large amounts of lactose. Such a regimen brings about a complete suppression of bacterial proteolysis in the intestine and the resultant production of intestinal

² Sippy B. W. Gastric and Duodenal Ulcer. J. A. M. A. 64: 1625 (May 15) 1915.

³ Hardt L. L. and Rivers A. B. Toxic Manifestations Following the Alkaline Treatment of Peptic Ulcer. Arch. Int. Med. 31: 171 (Feb.) 1923.

⁴ Dragstedt L. R. The Pathogenesis of Parathyroid Tetany, Am. J. Physiol. 63: 408 (Feb.) 1923. Am. J. Physiol. 59: 483 (1922). The Pathogenesis of Parathyroid Tetany. J. A. M. A. 79: 1593 (Nov. 4) 1922.

¹ Joslin E. P. The Treatment of Diabetes Mellitus. Philadelphia Lea and Febiger 1917. p. 394.

poisons It was concluded that parathyroid tetany or depression is due to an intoxication, and that the responsible toxic substances come chiefly from the gastro-intestinal tract They are supposed to arise through the activity of the proteolytic group of intestinal bacteria, and are probably for the most part protein cleavage products of the nature of amines The function of the parathyroid glands is to prevent intoxication by these poisons According to Dragstedt, the parathyroid glands do not furnish a hormone necessary for life, and dogs may be kept alive indefinitely after their removal, if treatment directed to the prevention of this toxemia of intestinal origin is carried out Dragstedt further reports that, after a period of rigorous dietary control, parathyroidectomized dogs may be placed on mixed rations without developing tetany or depression The mechanism of this readjustment to the loss of the parathyroids is not entirely clear, but it seems to him most likely that some other organ, probably the liver, has taken over the function of the missing tissue However, the animals are far more susceptible to untoward dietary influences, spoiled foods and meat in particular, than are normal subjects

In the same laboratory, Luckhardt⁵ and his co-workers have found that completely parathyroidectomized dogs can be kept alive, without showing tetany, on a diet very rich in meat, by means of the oral administration of calcium lactate After a time this can be stopped entirely without the appearance of tetany The spontaneous tetany occurring thereafter at irregular intervals, presumably because of constipation or the ingestion of large quantities of unspoiled or small quantities of putrid meat or other spoiled food, can be rapidly controlled by the ingestion of calcium lactate and by the giving of enemas On this basis, Luckhardt believes that the rôle of this calcium compound in preserving the life of completely parathyroidectomized animals is quite complex It does not seem probable that calcium salts act by meeting a deficiency of tissue or blood or lymph calcium on the view held years ago that the tetany after removal of the parathyroids was due to a loss of body calcium (calcium diabetes)

In harmony with the foregoing findings, studies of Salvesen⁶ at Christiania indicate the importance of the calcium factor in tetany The advantage of the innocuous milk diets is assumed to lie in their yield of calcium in contrast with meat, which is deficient in this element Meat diet lowers the calcium content of the blood and leads to symptoms of tetany, administration of milk or of calcium salts counteracts this From the standpoint of Salvesen's experiments, the characteristic feature in the chemistry of parathyroid insufficiency is the drop in blood calcium, which is more marked the

more parathyroid tissue is removed They suggest that the parathyroids control the calcium metabolism, and by doing so they influence the function not only of the muscle and nerve tissue but probably of all organs When the parathyroids are removed, the threshold for the excretion of calcium in the intestine is lowered How Dragstedt's observations on the effects of dietary regulation in the prevention of tetany can be made to harmonize with the experiences of the other investigators remains to be learned Perhaps the undoubted lack of calcium brought about through parathyroidectomy affects the permeability of the intestinal or other cells to poisons of intestinal origin, if so, the difficulty might conceivably be remedied either by supply of the element or by removal of the toxins It remains for further investigation to develop an explanation that will encompass all the now known facts

KEEPING THE BLOOD "FIT" BY EXERCISE

In the modern cult of personal hygiene, physical exercise occupies an exalted position The experiences of thousands of persons attest the benefits that may be derived from various forms of vigorous activity Here, as in many other instances in which the pendulum of interest swings rapidly from one enthusiasm to another, it is not always easy to identify the advantages, or to foresee the possible harms It sometimes happens that the attempt to analyze our experiences meets unexpected difficulties, or fails to reveal any rational basis for the accepted beliefs This has in large measure been the case with the physiology of exercise A study of current textbooks is illuminating in this respect They point to increased circulation, respiration, elimination, metabolism and neural activity as beneficial effects of exercise, yet one might equally well argue that these are an inevitable incident or necessary concomitant of muscular contraction rather than a specially advantageous by-product One popular writer,¹ for example, points out that in vigorous activity there is an increase in the force and rate of the heart, the respirations are increased in depth and frequency, perspiration becomes more marked, and more waste is eliminated There is in this heightened activity of the body systems a more or less complete change in the liquids of the body He asserts that combustion of chemical compounds in the cells releases new energy, old accumulations of waste are removed, and all the mechanisms for adjustment are put in tune Even reflective states, he asserts, are assisted by exercise, although, if carried to excess, of fatigue, mental activity afterward is slowed and it is concluded that the scientific study of exercise involves the selection of terms and the selection of that will favor best the particular subject

Unfortunately, these considerations lead us as to the physiology of exercise

⁵ Luckhardt A B and Goldberg B Preservation of the Life of Completely Parathyroidectomized Dogs J A M A 80 79 (Jan 13) 1923 Luckhardt and Rosenbloom Proc Soc Exper Biol & Med 19 129 130 1921 Science 56 48 (July) 1922 Luckhardt and Blumenstock Science 56 257 (Sept) 1922

⁶ Salvesen H A Studies on the Physiology of the Parathyroids Proc Soc Exper Biol & Med 20 204 (Jan 17) 1923

¹ Various J L Personal Hygiene and Exercise 1922 p 120

that it may be good for the body in many ways. But precisely why? A muscle becomes weakened through disuse, and ultimately atrophies. Its functional ability is maintained and enhanced by exercise, and strong, well developed muscles are an obvious advantage. Recently, Broun² of the Rockefeller Institute for Medical Research has added a new chapter to the physiology of exercise, pointing to the probability that it stimulates the hematopoietic system to increased efficiency. The conclusion is based on observations of the effect of vigorous muscular activity, exhibiting itself in blood destruction. A slight decrease in the total red cell volume and hemoglobin content of the organism frequently occurs during a single day of exercise in animals previously kept under sedentary conditions. As Broun has fancifully expressed his scheme of experiment, animals long accustomed to sedentary life, and in which presumably little blood was being destroyed or made, were exercised vigorously with the idea that the blood-forming tissue might be "caught napping" and not at once make up such unusual corpuscle losses as exercise would entail. This is precisely what seems to happen, and it is particularly evidenced by the increase in the number of reticulated red corpuscles in the peripheral circulation such as always follows hemorrhage or other unusual demands made on the hematopoietic tissues for new cells.

Broun argued that the loss of blood cells which has been demonstrated in sedentary individuals after vigorous exercise produces a temporary anemia in them only because their blood-forming tissues are not in condition to compensate for the increased corpuscular wear and tear. Further investigation by him has now shown that a course of "training" through exercise greatly facilitates the functioning of the bone marrow. The latter adapts itself to the increased demands made. For this reason, in normally active individuals a virtually constant balance is maintained between blood destruction and blood formation in spite of occasional unusual exertions such as may be supposed to cause a temporarily increased blood destruction. These investigations have contributed an important chapter to the science of the physiology of exercise. They show that it must be an important factor in the maintenance of an efficient hematopoietic tissue. Anatomic evidence points in the same direction, for Kulbs³ long ago observed at necropsy that exercise increases the amount of red marrow. Perhaps precise information of this character will before long give a more specific meaning to the current vague statements regarding the power of exercise "to develop the organs of the vital systems."

² Broun G. O. Blood Destruction During Exercise. *J. Exper. Med.* 36: 481, 1922. 37: 115 (Jan. 1) 1923. 37: 187, 207 (Feb. 1) 1923.
³ Kulbs. *Verhandl. d. Kong. f. inn. Med.* 26: 197, 1909.

Medicine and Superstition.—Modern medicine is linked to the race of superstitious beliefs or amulets and exorcisms, by its attitude toward treatment and especially to cure. Sir James Mackenzie, *Brit. J. Tuberc.* 17: 14 (Jan.) 1923.

Current Comment

THE EXPENDITURE OF ENERGY IN EXOPHTHALMIC GOITER

There are numerous statistics available to show the augmentation of metabolism in exophthalmic goiter. The increase in the basal exchange not infrequently amounts to more than 50 per cent, and is usually roughly proportional to the severity of the disease. Du Bois has recorded a rise of 87 per cent in one case. This shows itself, of course, in the total energy transformations of the patients, who sometimes require a daily food intake of 5,000 calories to maintain weight, even when they are confined to bed. One can scarcely attribute all of this increment to the characteristic nervousness and restless muscular activity on the basis of the usual expenditure of energy for the contractile processes. Plummer and Boothby¹ have therefore determined the actual "net cost of work" in terms of energy calculated from respiratory data on various persons. Normal persons expended an average of 118 gram calories over the basal metabolism for each horizontal kilogrammeter of work at the approximate rate of 800 meters an hour. The cost was no greater in several patients in a debilitated condition. In contrast, however, patients with exophthalmic goiter under identical conditions of work required an average of 228 gram calories. The "net cost" could be reduced by operative procedure for relief of the hyperthyroidism. Plummer and Boothby are convinced that persons with moderately severe exophthalmic goiter are very inefficient in converting potential energy into any kind of motion, as they require twice as much food fuel as do normal persons for the same work. This type of disease is associated with a characteristic increase in the number of useless movements, but, in addition to this, each movement requires approximately twice the normal amount of energy for its accomplishment.

TYPHOID FEVER IN 1922

Our annual summary of typhoid death rates in the large cities of the United States, which appeared last week, shows a continuance of the typhoid decline which has been so striking a factor of the epidemiology of this disease for the last twelve years. The slight interruption to the steady downward curve which occurred in 1921 was more than overcome in 1922, and the truly astonishing rate of 3.15 per hundred thousand has been reached. This is a little less than one sixth of the rate (19.59) for the large cities of this country in 1910. Three cities with an aggregate population of 473,975 were able to report a perfectly clean slate, not a single death from typhoid having occurred within their borders during the calendar year 1922. The main causes of indigenous urban typhoid in the United States at present seem to be contact with typhoid cases and typhoid carriers—a steadily diminishing hazard, occasional cases from contaminated shellfish and from bathing in polluted water, and, perhaps in some cities, from

¹ Plummer H. S. and Boothby W. M. The Cost of Work in Exophthalmic Goiter. *Am. J. Physiol.* 63: 406 (Feb.) 1923.

the improper disposal of excreta. Relatively few cases appear to be caused by polluted drinking-water, by milk supply, or, in the Northern cities, by inadequate sewerage. A considerable, if indeterminate, number of the typhoid deaths that occur in the large cities do not originate in the city itself, but are due either to infection contracted outside or to cases brought in for treatment. It is evident that not much further reduction in city typhoid rates can be expected until a diminution in rural typhoid can be brought about. In 1920, the rural death rate for typhoid, as reported by the Bureau of the Census, was nearly double the rate in the urban population. This condition is more marked in some parts of the country than in others. It is also true that in states with a large negro population typhoid rates are higher among the negroes than among the whites, for the same reasons probably that determine excess of typhoid in rural districts. The most encouraging feature of the whole typhoid situation is that our large American cities are no longer distributing centers of typhoid, black plague spots radiating corruption into the surrounding countryside. The two great agencies of typhoid dissemination, polluted water supplies and raw milk, are largely eliminated, and while cities of from 10,000 to 100,000 population have unquestionably much progress to make, especially in control of the milk supply, the condition in the larger cities for the most part may now be regarded with pride instead of being pointed to with obloquy as awful examples.

THE EXCRETION OF VITAMINS

The depletion of the body in vitamins, when these factors are not included in the food intake, is indicated by a variety of considerations. Most students of the subject are agreed that these food factors are not synthesized in the organism, so that the latter is dependent on exogenous sources for its supply. It is conceivable that the vitamins are destroyed in the body, either in the course of those reactions in which they may be physiologically concerned, or as an incident of the general chemical changes that proceed in the tissues and are usually comprehended in the expression metabolism. At any rate, it is known beyond question that all the familiar vitamins, A, B and C, pass into the milk, their content in this secretion apparently being modified by that of the intake. Equally plausible is the hypothesis that, instead of being stored or destroyed, the vitamins are eliminated from the body from time to time through the excretions, and are thus lost to the economy. Several years ago, Muckenfuss in this country asserted that traces of the antineuritic vitamin may be found in the human urine. Furthermore, the alleged presence of vitamin in the bile leads to the possibility of its loss with the feces. Now Van der Walle¹ or Eijkman's Laboratory at Utrecht brings added evidence in the same direction, with the further suggestion that the content of vitamin in the urine varies with the diet. Even more recently, Cooper² has demonstrated that vitamin A, if introduced in sufficient quantity into

the body, may pass into many of the secretions, including the urine. She suggests that the "alimentary vitaminuria" on diets rich in vitamin A probably indicates a limited capacity of the organism to store or destroy this factor. If this is further substantiated, the necessity of not allowing an unfavorable vitamin "balance" to arise in nutrition becomes an obvious deduction.

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THE SAN FRANCISCO SESSION

American Medical Scenic Special

A special train has been arranged for to leave Chicago over the Burlington Railroad at 11 p m, June 20 Stops will be made at Aurora, Mendota, Galesburg, Burlington, Ottumwa, Creston Council Bluffs, Omaha, Lincoln, Denver, Colorado Springs, Glenwood Springs and Salt Lake City This train will arrive at Omaha at 3 50 p m, and at Lincoln about 5 30 p m, June 21, at Denver at 7 30 a m, June 22 where a short stop will be made, and at Colorado Springs at 10 30 a m, June 22 A stopover of approximately twenty-four hours will be made at Colorado Springs to permit sight-seeing trips to the Garden of the Gods, Pike's Peak and other places of interest Sleeping cars will be placed conveniently, while at Colorado Springs, to meet the convenience of the party Leaving Colorado Springs at 4 a m, June 23, opportunity will be had to see the Royal Gorge and the Canyon of the Arkansas in daylight About five hours will be spent in Salt Lake City, June 24 From Salt Lake City, the train will proceed over the Western Pacific Railway, known as the Feather River Canyon route, which offers some of the most interesting sights between Chicago and the Coast San Francisco will be reached at 5 30 p m, June 25 This special train will be made up of the finest Pullman equipment, with dining car and observation car More specific information can be secured by addressing J R Van Dyke, General Agent, Passenger Department, C B & Q Railroad, West Jackson Boulevard, Chicago

Clothing for California Comfort

Clothing for California Comfort

We are receiving a number of inquiries as to the climate and character of clothing to be worn at the meeting of the American Medical Association last week in June. At this time of the year there will be a certain amount of wind, but the evenings will be quite chilly. Rain is not probable this time of year, and the days will be pleasant.

Persons coming to the annual meeting will need coats and evening wraps, fur coats, and wraps for ladies in the evening at this time of the year. A part of the state and the coast will be very much warmer than the interior, and the climate in the Eastern part of the state is the mountain resort climate. The climate of San Francisco in this state will be much cooler than the weights of underwear worn in the East. To meet the varying requirements of the climate, we are receiving a large quantity of clothing for the coming season.

GROUP SUBSCRIPTIONS TO WORLD

At a meeting of the General County Meeting
Michigan, it was voted to send Houghton to
the county. The society forwarded a check for
these subscriptions. In addition to the
of more than \$100.00. The
Society a large sum of money.
The money is now in the
of the money is now in the

1 Van der Walle N The Presence of the Antineuritic and Antiscorbutic Vitamins in Urine *Biochem J* **16** 713 1922

2 Cooper Ethel The Distribution of the Vitamin A in the Urine and the Digestive Secretions (Man Dog) *Am J Physiol* 60:45 (Feb) 1923

amount still further, provided the introductory subscription is left open. Other local societies have also sent in group subscriptions to *Hygeia*, among them, Pierce County, Washington, Cascade County, Montana, Genessee County, Michigan, Lake County, Indiana, Fergus County, Indiana, Portage County, Ohio, and Douglas County, Wisconsin. A number of societies have reported that the matter will be considered at the next meeting.

ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE, PUBLIC HEALTH AND HOSPITALS

Held in Chicago, March 5, 6 and 7, 1923

MEDICAL EDUCATION

MARCH 5—MORNING

The congress met in the Florentine Room of the Congress Hotel, and was called to order by Dr. Arthur Dean Bevan, chairman of the Council on Medical Education and Hospitals.

DR. LOUIS B. WILSON, Rochester, Minn., presented a report on Graduate Medical Education, which is reported on page 790.

Coordination of Courses of Instruction to Increase the Efficiency of the Medical Curriculum

DR. E. STANLEY RYERSON, Toronto. The subjects of the present curriculum are taught too independently in what is aptly called a "water-tight compartment" system. There is a lack of coordination between the fundamental medical sciences (anatomy and physiology) and the clinical subjects. The present method fails to educate the student in anatomy and physiology in such a way that he can recall and apply the principles learned when the occasion arises. This defect is attributed to (a) nonuse of clinical subjects to stimulate the student's interest in the first two years, (b) lack of opportunity for the student to apply his theoretical knowledge at the time he is learning it, (c) lack of opportunity for the student to develop a sufficient number of associated ideas, more especially between the theoretical fact and its practical applications, (d) the presence in the mind of the student of the false attitude that these subjects are completed once the examinations in them are passed, (e) the lack of any basis on which the student can select the important from the less important facts, and thus gain a thorough familiarity with essential facts.

SCOPE OF REVISED CURRICULUM

The present curriculum fails to provide the student with sufficient clinical experience. The lengthening of the course and the provision of repetition courses have failed to produce the desired improvement in the efficiency of the students. To overcome these defects, a revised curriculum should provide for (1) instruction according to modern educational methods, (2) opportunity for the student to acquire an absolutely up-to-date education in medical science, (3) coordination between the various subjects, and especially between anatomy, physiology, pathology, medicine and surgery, (4) opportunity for the student to apply his knowledge at the time he is acquiring it, (5) more prolonged clinical experience for the student by beginning it earlier in his course.

DIVISION OF SUBJECTS

The division of the subjects might be made on the basis of the particular anatomic systems to be dealt with in each year, as follows: first year, general introduction, tegumentary, muscular, articular and osseous systems; second year, cardiovascular and respiratory systems; third year, alimentary, genito-urinary and reproductive systems; fourth year, nervous system, special senses and endocrine system. In drawing up a new curriculum, consideration would have to be given to the exact way in which each fundamental scientific subject is applied in practice. It is then necessary to arrange the scientific subjects in correlation with the clinical subjects in which they are applied and numerous opportunities for the student to make the practical applications himself. The student then has not only a means of developing associated

ideas, but also a persistent and active stimulus to his endeavors.

At the beginning, the student would be given a general survey of each of the main subjects of the course, namely, anatomy, physiology, pathology, medicine and surgery. He would thus gain a clear idea of the magnitude of each subject and the relationship of the subjects to one another. Thereafter, the student would acquire a detailed knowledge of tegumentary, muscular, articular and osseous systems. In anatomy, the extremities would be dissected. Their microscopic structure would be dealt with in histology. In embryology, after a study of the whole subject, the method of the development of muscles, bones and joints would be covered. The course in pathology would include (a) pathologic histology, (b) bacteriology and (c) general pathology accompanied by demonstrations of the principles of inflammation in its various aspects. A general introductory course in medicine would cover etiology, the methods of differentiation, the interpretation of signs and symptoms, and some of the general principles underlying the prevention of disease. In surgery, the course would cover the clinical manifestations of inflammation, and injuries as they occur in the extremities.

In the second year, all departments would devote their chief attention to the cardiovascular and respiratory systems, covering in *anatomy*, the dissection, histology and embryology of the thorax, head and neck, in *physiology*, the circulation and respiration, in *biochemistry*, the chemistry of the blood and gases in the physiology of the heart and lungs, in *pharmacology*, a general study of the various pharmacologic groups and the effects produced by drugs on the heart, lungs, breast and extremities, in *pathology*, the gross histologic changes of the heart and great vessels, lungs and pleura, breast, thyroid, lip, tongue and jaws, in *medicine*, the physical examination of the heart and lungs with the diagnosis of the diseases of these viscera, and in *surgery*, conditions of the thorax, mammary glands, neck and thyroid, the lesions of the lip, tongue and jaws, and the surgical aspect of the diseases of the circulatory and respiratory systems. Injuries and diseases of particular bones and joints would also be taken up.

In the third year, attention would be devoted chiefly to the alimentary, genito-urinary and reproductive systems. In anatomy, the dissection, histology and embryology of the abdomen and pelvis would be covered.

In the fourth year, the departments would devote the main part of the time to the consideration of the nervous system, organs of special sense and the endocrine system. The anatomy of the eye, ear, nose and throat, as well as the brain and spinal cord would be studied. In physiology, the student would take up the nervous system, special sense organs and the ductless glands. In pathology, he would note the results of disease and injury in the brain, cord and peripheral nerves and organs of special sense. In pathologic chemistry, the general disorders of the chemical processes of the body would be taken up, the student conducting individual chemical examinations. In medicine, the diseases of the nervous system and the ductless glands would be covered. The more important psychoses would be outlined. The treatment of the patient suffering from diseases would be covered in therapeutics. In surgery, the injuries and surgical diseases of these parts would be given. In obstetrics, the abnormal conditions arising during pregnancy, labor and the puerperium would form the syllabus, while in gynecology more advanced parts of this subject would be covered. In ophthalmology, the methods of examination of the eye, and testing sight would be dealt with. In otolaryngology, the methods of examining the ear, nose and throat, along with the tests for hearing, would be taught on patients. In pharmacology, the student would see the effects of drugs on the nervous system and the organs of special sense. In preventive medicine and hygiene, a course dealing with the problem of preventive medicine, hygiene and sanitation would be given. Such a course as that outlined above appears to be feasible, and its adoption would provide for a coordination of the courses for more opportunities to develop associated ideas, and for the student to be in attendance at the hospitals for two years longer than he does at present.

Revision of the Curriculum

DR ARTHUR DEAN BEVAN, Chicago, outlined in detail the methods he followed in an investigation regarding the objections to the present-day medical curriculum. This investigation included interviews with the professors of the various laboratories and clinical departments of the medical school, special inquiry being made in regard to the opportunities for a better correlation of laboratory and clinical subjects, and in what manner the medical curriculum might be revised so as to bring laboratory and clinical subjects more nearly parallel throughout the four years. He also secured the opinions of a large number of medical students who were in the advanced classes, having completed their clinical work, in which criticisms were obtained regarding the manner in which the various laboratory and clinical subjects were taught. Their criticism may be thus summarized:

CRITICISMS

1 The work of the first two years is too theoretical, much of it is intended primarily for research. There is too much notebook work and too little reference to clinical application.
2 Anatomy receives much criticism, there is too little lecture work and demonstration, too little individual teaching, too much instruction by student assistants, and very little clinical application.
3 The work is considered too theoretical in biochemistry. It requires time far out of proportion to its importance. It could be made to include subjects given in laboratory diagnosis. There is much criticism of this department. Pharmacology is unsatisfactory in that its practical application is not made clear to the student. Physiology does not have enough practical application pointed out and emphasized. The pathologic department, on the whole, receives more favorable criticism than any other in the first two years.

The work of the third and fourth years is thus criticized. A better course in prescription writing should be given. More discussion on therapeutics should be given in the clinics. The definite line of treatment should be given as each case is presented. More definite instruction should be given on such therapeutic agents as the roentgen ray and radium, and the clinical value of such tests as basal metabolism and electrocardiography should be made clearer.

In medicine, better courses in laboratory diagnosis are urged. The value of the small teaching clinic is recognized. Better instruction in physical diagnosis is needed, and more systematic instruction in the large teaching clinics.

It is urged that surgery be taught with ample pathologic material both gross and microscopic, and that its clinical application be shown by the introduction of patients illustrating the various conditions discussed. The value of the large teaching clinic is recognized, and the criticism made of operating in these large teaching clinics. They feel that little or no operating should be done in these clinics. The great value of dispensary work and of the small section hospital clinic of the ward walks is recognized. The courses on dog surgery and of surgical anatomy and operative surgery on the cadaver are favorably criticized. In obstetrics, the chief criticism is that the student sees too little pathologic obstetrics. The outside obstetric cases attended by the student under tutor and obstetric assistant instruction are appreciated by the student and criticized favorably. The instruction in the specialties—eye, ear, nose and throat and dermatology, pediatrics and neurology—receives fairly generally favorable criticism. I have also obtained from a number of interns and senior students their opinions of the fifth hospital or intern year, and they all regard it as absolutely essential, and more than 90 per cent prefer a mixed to a single service.

PLAN FOR REVISING CURRICULUM

On the basis of the foregoing study, I venture to submit this specific plan. 1 There are certain portions of the subjects of anatomy, physiology, pathology and pharmacology which are essential in actual practice and which are used every day in clinical work and which must be mastered. 2 The sum total of the knowledge now actually required is enormous, and is sufficient to crowd the time which can be allotted to the medical curriculum. 3 The essential portions

of the daughter sciences should be taught so as to make clear their application to clinical work. This necessitates a radical change in the curriculum, the introduction of the patient and the clinic at the very beginning of the medical course.

In revising the undergraduate curriculum, we must drop those portions of the sciences which have as yet no clinical application in the hands of the general practitioner. As an illustration, a large part of the formidable subjects of biochemistry and intricate neurology should be eliminated. There should be introduced into the first year a general medical clinic in charge of a broadly trained man of the Osler type. This clinic should be given once a week, and at this clinic should be demonstrated patients who represent big general clinical problems, such as diabetes, toxic goiter, jaundice, ascites, syphilis, tuberculosis and leukemia and the use the clinician makes of anatomy, physiology, pathology and pharmacology in handling these problems should be demonstrated. At the same time, the laboratory teachers should have access to this clinical material so that they can demonstrate examinations of blood, urine, blood pressure, basal metabolism, etc., and the laboratory side of these same clinical problems. Pathology should be continued into the clinical years as a well organized department in charge of the postmortem work and general pathology laboratories and museum. The professor of pathology should act as a consultant in important problems in pathology. Whatever revision of the medical curriculum is made, there must be no conflict of authority, and there must be good teamwork.

(To be continued)

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

John A. Andrew Clinical Society—The fifth annual meeting of the John A. Andrew Clinical Society will be held at the Tuskegee Institute April 1-7. Dr. Richard H. Miller of the Massachusetts General Hospital and Dr. William B. Breed of Boston, will lecture and give surgical demonstrations.

Personal—Dr. Edwin O. Williamson, Gurley, has been elected president of the Madison County Medical Society to fill the unexpired term of Dr. C. A. Grote, county health officer who has gone to Greensboro, N. C.—On the retirement of Dr. C. H. Smith of Montgomery as physician inspector for the state convict department, the inmates of Kilby prison presented him with a gold ring as a token of their esteem.

CALIFORNIA

Physician Sentenced—Dr. G. A. Scheuer, San Francisco, was committed to jail for thirty days. It is reported when he pleaded guilty to violation of the prohibition act, February 21.

Personal—Dr. Wood C. Baker, county physician of San Mateo County, has accepted an appointment as superintendent of the new San Mateo County Community Hospital to be opened at Beresford in June.—Dr. George C. Wrigley, Sonoma, has been reappointed physician of Tuolumne County.—Dr. Herbert M. Evans, professor of anatomy at the University of California, Berkeley, addressed the Alameda County Medical Society, February 22.—Dr. Clarence A. Tillotson, Dinuba, was seriously injured when the automobile in which he was driving was struck by a fire engine, February 2. Dr. John J. Sippy, Helena, Mont., has been appointed of the public health board of San Joaquin County, with quarters at Stockton.

COLORADO

Hospital News—Construction work on the first three of the Swedish National Sanatorium to be erected in D will be commenced, April 1. The construction of building cost \$500,000, and will cover 100,000 sq. ft. The construction will have a capacity of 5,000 patients. The building will be erected at the Fort Collins Co.

include two operating rooms and a roentgen-ray laboratory—The Weld County Hospital at Greeley has recently been opened

CONNECTICUT

Public Health News—A hearing of the Milk Regulation bill, in accordance with Section 2486 of the General Statutes, was held, March 7, in Hartford, to consider regulations regarding the manufacture and sale of ice cream and changes in the specifications for Grade A milk—A case of yaws was recently reported from Ansonia. The health officer stated that the patient arrived in the United States two months ago from Jamaica—The division of venereal diseases of the state department of health is holding a series of conferences, in cooperation with the Hartford Medical Society to which all physicians are invited. The first conference was given at the Hunt Memorial, Hartford, March 16, by Dr John H Stokes of the Mayo Clinic, Rochester, Minn

DISTRICT OF COLUMBIA

Free Medical Treatment for Shriners—All physicians, nurses and druggists of Washington will give free treatment when necessary to the Shriners and visitors during the session of the imperial council of the Mystic Shrine in June, it was announced by Dr Charles S White, chairman of the medical and Red Cross committee. This service will include emergency dentistry, eye glass repairing, nursing, and prescriptions from druggists. Twenty army ambulances and ten private ambulances will be constantly on duty and within easy call

ILLINOIS

Lay Educational Fund—More than 500 members of the Illinois State Medical Society have subscribed to a fund to publish in the newspapers of the state the profession's methods of serving the public, it is reported

Smallpox at Rock Island—Following the outbreak of smallpox at Rock Island, the city physician, Dr A N Muller, has issued orders that every schoolchild must be vaccinated within the next ten days or remain away from school indefinitely. The board of health asks the public's cooperation in stamping out the threatened epidemic

Personal—Dr George T Palmer, president of the Illinois State Tuberculosis Association, lectured at Louisville recently, during the celebration of "Health Week"—Dr Albert W Bradford has returned to his home in Lacon from the Proctor Hospital where he has been a patient with a broken leg for seven weeks.—The Joseph A Holmes Safety Association of Washington, D C, has awarded the gold medal of the society to Dr Andrew W Springs, Dewmane, for his heroic work in the Royalton Explosion of October, 1914—Dr Louise H Keator, formerly a medical missionary to China, has been transferred to the Dixon State Hospital from the Lincoln State School and Colony

Chicago

Personal—Dr Charles E Humiston and Dr Frederick W Beslev gave addresses at the annual banquet of the Lake County Medical Society at Waukegan, March 1—Dr Roy C Flickinger, Ph D, for four years dean of the college of liberal arts at Northwestern University, tendered his resignation to President Walter Dill Scott, March 10, to become effective, July 1

Michael Reese Alumni Association—There will be a meeting of former Michael Reese interns, March 22 at Michael Reese Hospital for the purpose of organizing a Michael Reese Hospital alumni association. Every ex-intern is urged to be present if possible. Those living in distant parts who may be unable to attend are requested to send their present addresses to Dr Ralph B Bettman, secretary of the Internes Alumni Association Michael Reese Hospital, Chicago

INDIANA

Personal—Dr Max Bahr, of the Central Indiana Hospital for the Insane gave the last of a series of lectures on forensic psychiatry, March 8, on "Methods of Examining Insane Criminals"

Whole Family Has Smallpox—Dr Willis B Huron of Tipton county health officer recently found the family of George W Van Horn a wife and three children, suffering from smallpox.

Protest Against State Laboratory Examinations—A group of Indiana physicians whose specialty is laboratory diagnosis presented a statement to the state board of health in protest

against indiscriminate examinations made by the state hygienic laboratory. It was said that at present the state laboratory examines practically every kind of specimen sent in by physicians free of charge regardless of its having any bearing on the enforcement of public health measures, or whether the patient is a proper beneficiary of free public medical service. The natural outcome of this custom is that physicians send all types of specimens from patients who can and do pay the physicians for service which the state laboratory renders free. The state thus enters into competition with physicians whose specialty is clinical diagnosis, and at the same time pauperizes the patients at the expense of taxpayers. In order to correct this particular abuse, it was suggested that physicians be required to certify that specimens forwarded which do not concern public health measures are from indigent patients to whom the physicians are making no charge whatsoever for their services. The protest was considered by the state board of health, February 14, which directed the superintendent of the laboratory to prepare a statement to the medical profession of Indiana setting forth a policy in laboratory matters, and to prepare a certificate to be used by physicians when specimens are forwarded for examination. The secretary, Dr W F King, in a letter to the editor of the *Journal of the Indiana State Medical Association* said, in part, that the state board of health will go into this whole matter fully and will have in mind the good of the medical profession as well as the public, in any action that may be taken

IOWA

Summer Course at Iowa University—A special course for public health nurses will be a part of the summer school work at the State University of Iowa, Iowa City. The course is designed for those nurses in public health work who are unable to take the work in the regular school year. Among the courses to be given will be those in public health nursing, child hygiene, hygiene and preventive medicine, psychology, speech and sociology. The various college faculties of the entire university will be drawn on for instructors. Miss Helena R Stewart will be director of the school

LOUISIANA

Personal—Dr Richard A Bolt, Washington, D C, director of the medical service of the American Child Health Association gave an address at the annual meeting of the Child Welfare Association in New Orleans, February 27

State Medical Meeting Changed—The annual meeting of the Louisiana State Medical Society will be held in New Orleans, April 24-26, instead of April 10-12, as previously announced. Dr P T Talbot, New Orleans, is secretary of the society

MARYLAND

Personal—The supervisors of city charities have appointed the following staff of physicians to Bay View Hospital. Dr Leo A Lally, resident physician of the tuberculosis hospital, Dr Claude G Drace, resident physician at the general hospital, Dr R J Fulton, resident hospital surgeon, Dr I Franklin, resident physician of the hospital for the insane, and Dr Joseph T Eafan, assistant resident hospital physician—Dr Martin F Sloan, for eleven years superintendent of the Eudowood Sanatorium, Towson, has opened the Maple Heights Sanatorium at Sparks, for the treatment of tuberculosis—Dr Arthur J Lomas, former assistant superintendent of the Johns Hopkins Hospital and at present superintendent of the Iowa State University Hospital, has been appointed superintendent to the University of Maryland Hospital, Baltimore, to succeed Dr Kenneth B Jones resigned—Dr Charles W Hoffman has resumed the practice of surgery and gynecology at 1102 North Charles Street, Baltimore

MASSACHUSETTS

Massachusetts Association for Occupational Therapy—At the second annual meeting of the association Dr Elliott G Brackett was elected president, Dr John D Adams, vice president and Miss Greene, secretary

Dinner to Dr Edsall—The medical staff of the Massachusetts General Hospital Boston, gave a dinner in honor of Dr David L Edsall February 27, at the University Club. Dr Edsall has just returned from abroad. Dr Gerardo M Balboni was toastmaster. Dr Frederick A Washburn and Dr Richard C Cabot were among the speakers

Award for Malpractice—It is reported \$5000 was awarded A E Clarke of Malden in the East Cambridge Superior

Court, March 2, in his suit for \$25,000 against Dr Clarence H Staples of Malden. Clarke alleged that Dr Staples did not give his leg proper treatment following an automobile accident and that as a result he is permanently lame.

New England Health Institute Postponed—Dr Eugene R Kelley, state health commissioner, announced that the New England Health Institute, held in Hartford, Conn., in 1922, will not be held in Boston this year as was planned, having been postponed until 1924. This change was necessary because of the Boston Health Show, which will be held in the Mechanics Building, Boston, October 6-13.

MICHIGAN

Fellowship in Pathology for Detroit College—Dr George E Potter has endowed a fellowship in pathology in the Detroit College of Medicine and Surgery, it was recently announced by the Wayne County Medical Society. The endowment amounts to \$1,000 a year.

Violation of Medical Law—According to reports, Harry L Wise, agent for D L Smith of the 'Vitalizer' Company, Detroit, was fined \$60, with an alternative of thirty days in the House of Correction, January 12, when he pleaded guilty to a charge of violating the medical law. Smith was fined \$100 on the same charge two days earlier.

MISSOURI

Personal—Dr Eugene A Scharff, superintendent of the Isolation Hospital St Louis, was appointed superintendent of the City Hospital, recently, to fill the vacancy caused by the recent death of Dr Rolla Henry. Dr Joseph K Phipps, Grant City, was reappointed deputy state health commissioner at the last session of the county court, for a period of three years. Edward A Doisy, Ph.D., has been appointed professor of biochemistry at St Louis University School of Medicine, the appointment to take effect, August 1. Mr Doisy is at present associate professor of biochemistry at Washington University School of Medicine, St Louis.

NEW JERSEY

Physicians Oppose Naturopathy Bill—A meeting of physicians was held at the state house, Trenton, February 5, to protest against the passage of Assembly Bill 58, known as the Naturopathy bill. Dr Wells P Eagleton, Newark, chairman of the welfare committee of the state medical society, presided.

Illegal Practitioners Sentenced—According to reports from the state board of medical examiners, A Wilson Wood, a chiropractor of Ridgefield Park, was convicted of practicing medicine and surgery without a license, February 27. In the case of George C Lezenby, Camden, where the evidence showed that the defendant gave only electrical treatments, the judge of the district court dismissed the suit, holding that the board of medical examiners failed to establish any proof that the defendant had violated the medical act. On the board's carrying the case to the supreme court the judgment of the district court of the city of Camden was reversed.

NEW YORK

Mumps at Sing Sing—An epidemic of mumps has appeared at Sing Sing prison. Thus far, only officers and attendants have contracted the disease.

Woman Sentenced for Murder of Physician—Mrs Lillian Raizen was sentenced to from twenty years to life in prison, February 27, it is reported, for the murder of Dr Abraham Glickstein of Brooklyn.

Health Officers' Conference—State Health Commissioner Hermann M Biggs announces that the annual state conference of health officers and public health nurses will be held at the Grand Union Hotel, Saratoga Springs, June 26-28.

Damage Suit for Necropsy—The trial of a suit for \$20,000 damages commenced by Mrs Regina Abrahms widow of Joseph Abrahms, who died, Jan 28 1921, against Dr William H Garvin superintendent of the Kings Park State Hospital and Dr Walter H Sanford of the staff has come before the supreme court in Brooklyn. Mrs Abrahms charges that her husband's body was mutilated during the performance of a necropsy, and that necropsy was performed without her consent. This is denied by the defendants who state that at the time her husband was taken to the institution, Mrs Abrahms virtually consented to a necropsy should he die there. It is also stated that Mrs Abrahms' mother signed a formal consent.

New York City

Influenza Among City Employees—Nearly 2,000 of the city employees are suffering from influenza and pneumonia, it is announced. Out of 32,322 employees, 1,869 are off duty owing to sickness. Out of 10,000 policemen, 620 are off, and of the fire department's 6,000 men 380 are sick.

Janeway Lecture—The Mount Sinai Hospital invites physicians and their friends to attend the E G Janeway Lecture to be given at the Blumenthal Auditorium, March 26, by Prof J J R MacLeod of Toronto University, Canada. His subject will be 'Experimental Work on Diabetes and Insulin'.

'Face Specialists' Lose Suit—A verdict of \$25,000 was awarded by a jury in the supreme court, February 21, to Miss Florence Clover according to report, in her suit against Dr Oswald C Stackhouse and the John Woodbury Company, Inc. charging that her face was disfigured as the result of treatment to reduce the length of her nose.

Case of Leprosy at Bellevue—A case of leprosy was recorded at Bellevue Hospital March 3, when Abraham Wiener, 50 years old was transferred there from the Jefferson Davis Hospital. The patient was placed in the contagious ward. He came to New York about three weeks ago. This is the only case of leprosy in New York City, as far as known.

New Health Commissioner Named—Mayor Hylan made official announcement of the appointment of Dr Frank J Monaghan to the post of health commissioner of the city of New York, to succeed Dr Royal S Copeland, who has become United States senator. Dr Monaghan entered the department of health at the beginning of Mayor Hylan's first term and has been the deputy commissioner.

Epidemic Encephalitis in New York—The total number of cases of epidemic (lethargic) encephalitis occurring in this city since January 1 is 370, and the number of deaths, 115. The largest number of weekly cases occurred during the weeks of February 24 and March 3, seventy-eight and sixty-eight, respectively. For the first six days of the week of March 10, there were reported thirty-eight cases, with eighteen deaths. It is believed that the outbreak has passed the peak and is on the decline.

Benefit Performance of "Pasteur"—Mr Henry Miller gave a benefit performance of the play 'Pasteur' by Sacha Guitry, for the New York Academy of Medicine Building Fund. It has been suggested that the proceeds be used for the maintenance of a memorial to Louis Pasteur in the proposed new building of the New York Academy of Medicine. This performance, which took place, March 14, was the first public presentation of the play in this country. The New York Academy of Medicine is conducting an intensive drive to raise the \$250,000 fund for the site of its proposed new building, the funds for which are contingent on the raising of this amount for the site.

OHIO

Physician's License Restored—The Ohio State Medical Board reports that the license of Dr Henry Oliver Davis Akron which was revoked in 1915 following his conviction for selling narcotics illegally, was restored in January 1918.

Physician Sentenced—Dr Addison D Hobart, Toledo, reports state, was sentenced to serve three years in the Atlanta penitentiary by Judge Killits in the federal court March 5, when he was found guilty of violating the Harrison Narcotic Law.

Noted Physical Chemist Dies—Edward W Morley, Ph.D. Sc.D., for thirty-seven years professor of chemistry at Western Reserve University, Cleveland, and at Cleveland Medical College for the period 1873-1888 died at his home in Hartford, Conn., February 24. Dr Morley was a correspondent member of the British Association for the Advancement of Science, an honorary member of the Royal Institute of London and the Chemical Society of London, and has served as president of both the American Association for the Advancement of Science and the American Chemical Society.

PENNSYLVANIA

Personal—For the first time in the history of Pennsylvania it is said, a woman has been appointed a member of the governor's cabinet. Dr Ellen C Potter, a woman named welfare commissioner by Gov. Spang, and Will G Turnbull superintendent of the Department for Tuberculosis since deputy commissioner of health.

Dr John D McLean, Harrisburg, who resigned, March 1 —Dr Edward W Bixby, Wilkes-Barre, has been appointed county medical director of Luzerne County, to succeed Dr Charles H Miner —Dr S Leon Gans, chief of the division of venereal disease control, Harrisburg, has resigned, the resignation to take effect, April 1 —Dr John F McCullough, Pittsburgh, will read a paper on "Complete Examination in Diseases of the Upper Right Quadrant," before the semi-annual meeting of the Roentgen Ray Society of Central Pennsylvania, April 27, at Williamsport

Philadelphia

Personal—Dr Richard H Harte, formerly director of health and charities, was awarded the Distinguished Service Medal, March 7, by the War Department Colonel Harte was medical director of the Pennsylvania Hospital's Base Unit No 10, one of the earliest American hospitals in France

Smallpox Closes School—More than 5,000 residents of the territory bounded by Thirty-Seventh and Thirty-Ninth streets and Haverford and Fairmount avenues were under quarantine, March 8, after the discovery of one case of smallpox at 3828 Mount Vernon Street Police lines were drawn around the restricted area at 3 o'clock, and fifty physicians in charge of Dr A A Cairns of the department of health, began the work of inoculation The Mantua Primary School, at Mount Vernon and Thirty-Eighth streets, was closed because of the quarantine The district was the largest and most thickly populated of all that has been under quarantine in recent months, and the work of vaccination was necessarily slow, because of the large number of children in many of the families

SOUTH CAROLINA

Personal—Dr Henry H Workman, Woodruff, and Dr Newton T Clark, Spartanburg, were elected president and secretary, respectively, of the Spartanburg County Medical Society at the annual meeting —Dr William M Love, Chester, has been appointed to the board of health to succeed Dr William R Wallace —Dr B R Brown, city physician and chairman of the board of health of Gaffney, with four other members of the board, resigned, February 28

WASHINGTON

Health Exposition—A health exposition will be conducted in Seattle, May 16-26, similar to the one recently staged in Portland It will be conducted by the American Health Exposition organization, and will have the cooperation of the state and county medical societies Moving pictures, lectures and health exhibits will be among the features on the program at Seattle

WISCONSIN

Physician Sentenced—It is reported that Dr Henry T Brogan, Milwaukee, convicted of fourth degree manslaughter following the death of a woman as a result of an obstetric operation, was sentenced to one year in the house of correction, February 27

Personal—Dr Smiley Blanton of the University of Wisconsin Medical School, Madison, spoke on "Organic Changes in Dementia Praecox," before the Milwaukee Neuropsychiatric Society, February 23 —A party was tendered Dr Gilbert Mueller on the occasion of his resignation as house physician at the Emergency Hospital, Milwaukee Dr Edward J Craite, Rice Lake has been appointed to succeed Dr Mueller —Dr John M Conroy, formerly connected with the Nopeming Sanatorium, Nopeming Minn has been appointed superintendent of the Pureair Sanatorium at Bayfield, to succeed Dr M S Hosmer

WYOMING

Personal—Dr Robert W Hale, Thermopolis, has been appointed a member of the new state board of health by Governor Ross —Dr Walter H Hassel has leased the Lusk Hospital at Lusk This institution was recently closed

Northwestern Wyoming Medical Society—At the annual meeting of the society held in Powell recently the following officers were elected for the ensuing year president Dr Francis M Lane Cody, vice president, Dr Neil D Nelson, Thermopolis and secretary-treasurer Dr Frank A Mill, Powell Dr Will V Gage, Worland read a paper on Asthma The March meeting of the society at Thermopolis has been postponed until June, owing to unfavorable weather and roads

CANADA

Harvey Club of Canada—A piece of mahogany, obtained from the Harvey home built in Folkestone, England, in the sixteenth century, has been presented to the Harvey Club of Western University, London, Ont The specimen will be made into a gavel for the use of the president of the club

Canadian Medical Association—The annual meeting of the Canadian Medical Association will be held in Montreal, June 12-14, under the presidency of Dr David H Arnot, London, Ont The association has been investigating the feasibility of establishing a college of surgeons in Canada A committee was appointed for this purpose at the last annual session at Winnipeg, June 20-23, 1922, and will report on the matter at the Montreal meeting

GENERAL

Western Electro-Therapeutic Association—The fifth annual meeting of the association will be held in Kansas City, Mo, April 19-20, under the presidency of Dr Howard Plank of Chicago Drs F H Morse, Boston, and H H Bowing, Rochester, Minn, will be among the speakers

Aid for Tuberculous Veterans—The sum of \$50,000 has been voted by the Knights of Columbus for the aid of tuberculous and otherwise disabled war veterans who are stranded in the Southwestern states, where they have gone in search of work and health The money has been forwarded to national headquarters of the American Legion, who will administer the fund

Award for Radium Research—At a meeting of the American Roentgen Ray Society in Atlantic City, N J, recently, it was announced that \$1,000 would be awarded by the society for the best original research in the field of roentgen ray, radium or radioactivity The competition will close July 1 Drs George E Pfahler, Philadelphia, Frederick H Baetjer, Baltimore, and George W Holmes, Boston, will be the judges

American Congress on Internal Medicine—The seventh annual clinic week of the American Congress on Internal Medicine will be held in Philadelphia, April 2-7, under the presidency of Dr Sydney R Miller of Baltimore The opening session will be held in Mitchell Hall, College of Physicians Building, at 2 p m, April 2 Dr Thomas R Neilson, president of the College of Physicians of Philadelphia, and Dr William Pepper, dean of the University of Pennsylvania Medical School, will give addresses

Recognition of National Examining Board—The governor of the state of Texas has announced that the certificate of the National Board of Medical Examiners will in future be recognized February 9, Governor Cox signed an act which will permit the Massachusetts Board of Registration in Medicine to accept the certificate of the national board in place of and as equivalent to its own professional examination in determining the qualifications of a candidate for registration This act amends Chapter 112 of the General Laws of the Commonwealth, which has required the board of registration to give its own examination to each candidate for registration in medicine This amendment becomes effective, May 9 The national board is now officially recognized by boards of registration in twenty-three states, and recognition in three other states is expected soon In addition to the recognition by state boards, the certificate of the National Board of Medical Examiners is accepted as equivalent to the required professional examination of the U S Army, Navy and the Public Health Service, by the American College of Surgeons and by the Mayo Foundation Reciprocal relations have also been established with the Conjoint Examining Board of England and the Triple Qualification Board of Scotland

FOREIGN

Netherlands' Contribution to Pasteur Monument—The committee in the Netherlands has collected and presented to Professors Borrel and Weiss at Strasbourg the sum of 10,000 francs toward the monument to Louis Pasteur in the city in which he began his scientific career

The Carthage Prize—This biennial prize was founded in 1921 and has just been awarded for the first time The recipient is Dr Nicolle, noted for his researches at Tunis on the transmission of typhus and on trachoma, Malta fever, leishmaniasis and other tropical diseases He first proved transmission of typhus by lice

Organization of Pediatric Society in Belgium—In January, the Societe belge de pediatrie was organized It is proposed to hold five meetings a year Professor Pechere, 30 rue des

Drapiers, Brussels, is the secretary. He is to preside at the annual meeting of pediatricians of French-speaking countries, which is to be held at Brussels in September of the current year.

Bust of Pasteur for League of Nations—The Pasteur Institute of Paris and the descendants of Pasteur will present to the Council of the League of Nations a bust of Pasteur, in gratitude for the appointment of a member of the Council and a delegation from the health committee of the League of Nations to attend the centenary of Louis Pasteur at Strasbourg.

Approaching Congresses Abroad—April will see the International Congress on Thalassotherapy (the sea), at Venice, April 9 to 12, with excursions to Italian watering places and to the Italian Congress on Hydrology, which meets at Palermo, April 15. Professor Ceresole, Ospedale civile, Venice, is the secretary of the international gathering. At Rome, April 5 to 7, the Italian Societa freniatria holds its sixteenth annual meeting. The secretary is Prof F Bonfiglio, via del Mascherino 72, Rome.

French Ophthalmologic Congress—The thirty-sixth congress of the French Societe d'ophthalmologie is to be held this year at Strasbourg, June 11 and the following days. The discussion on "Treatment by Subconjunctival Injections" is to be opened by Dr Van Lint of Brussels. The French railways allow a reduction of 50 per cent to members of the congress, and various excursions have been planned. For further details, apply to Dr R Onfray, 6 ave de la Motte-Picquet, Paris.

Bicentennial of Christopher Wren—The bicentenary of the death of Sir Christopher Wren was observed in London, February 25-March 3. The ceremonies were organized by the Sir Christopher Wren Bicentenary Grand Committee, consisting of representatives of thirty-eight scientific and municipal bodies. Sir Christopher Wren was president of the Royal Society from 1680 to 1682, and was the designer of the Royal College of Physicians. A memorial volume of essays on various aspects of his life and work was published, the profits being devoted to the preservation fund of St Paul's Cathedral, of which Sir Christopher was the builder.

Biologic Neuropsychiatric Reunions—Under this name, the physicians of the Asile Sainte-Anne at Paris are holding quarterly conferences to demonstrate the new biologic methods of research in nervous and mental diseases. At the January meeting, Claude gave tests of the polygraph, which records the solar reflexes and the oculocardiac reflex. Garrelon presented evidence that dogs in which hypervagotony is induced are more susceptible to the action of toxins. Aubel's data confirmed that functional tests of the liver demonstrate insufficiency of this organ in melancholia. A number of neurologists from home and abroad attended this reunion. The second is to be held early in April.

Personal—Dr Thomas Gwynne Matland, Birmingham, England, delivered a lecture before the members of the staff of Troy Hospital, Troy, N Y, January 17. Dr Matland was director of the typhus colony in Serbia during the World War. Sir Arthur Keith delivered his six Hunterian lectures on "Man's Posture. Its Evolution and Disorders" in the theater of the Royal College of Surgeons, London, March 5-16. Dr Stockis, professor in the University of Liege, has been elected president of the Belgian Federation of Scientific Societies. A course of three lectures on "Recent Work on Inborn Errors of Metabolism" was given by Sir Archibald E Garrod at the University of London, February 28, March 7 and 14. The honorary medical degrees conferred by the Paris University on Dr W W Keen of Philadelphia and on Golgi at Pavia are to be presented at the convocation, Nov 24, 1923. Professor Pittaluga of Madrid has been lecturing at the Paris medical school on "Diseases of the Blood" and "Malaria." He was banqueted by the dean of the medical school, and he also spoke in Vaquez's service. Professor Recasens of Madrid will lecture at Paris in April. The University of Bordeaux has conferred an honorary degree on Prof Ramon y Cajal. It is the first time a degree of the kind has been given by this university outside of France. Drs A Wimmer and K Krabbe of Copenhagen have been elected corresponding members of the Societe de neurologie at Paris. Dr A Bang also of Copenhagen, has been elected a member of the French Cancer Research Association.

Deaths in Other Countries

Dr J J Cox of Manchester, England, former president of the Royal Society of Medicine of Edinburgh, the Manchester Medical Society and the Manchester Clinical and Pathological Society, consulting physician to the Manchester Northern

Hospital for Women and Children, in Scotland, January 17, aged 66.—Dr J A Raubenheimer, member of the South African parliament, at Oudtshoorn.—Capt Wesley Barritt, dental surgeon of Harley Street, aged 52.—Dr Constance Long of London, at the home of Dr Beatrice Hinkle, New York, U S, February 16, from pneumonia.—Prof Christian Saugman, chief of the Vejleford Sanatorium in Denmark and an authority on treatment of pulmonary tuberculosis. He had recently accepted the invitation of the Royal Medical Society to lecture in England on "Thoracoplastic Operations in Pulmonary Tuberculosis."—Dr G J Witkowski of Paris a practitioner and medical historian, author of "The Nude in the Theater from Antiquity." "The Physician in the Drama," "Medical Anecdotes" and "Human Generation," now in its ninth edition.—Dr D Baiardi, professor of surgical pathology at Turin.—Dr Theodore Zaymis, professor of surgery at the University of Athens.—Dr Rafael Pastor Reig, professor of surgery at the University of Valencia, one of the editors of *Policlínica*.

CORRECTION

Experimental Hydronephrosis—In the paper by Dr Frank Himman on this subject in THE JOURNAL, Feb 3 1923 page 315, an error has been made in the photograph labeled Fig 2, the wrong photograph having been sent by the author. A correction appears in the author's reprints.

Government Services

Aviation Examining Unit Authorized

Pursuant to instructions of the Secretary of War, the organization of Aviation Physical Examining Unit No 16 (a Pennsylvania state unit), organized reserves, has been authorized.

Physical Examinations for Training Camps

In the Army Appropriation bill provision is made for the expenditure of \$6,400,000 for civilian military training camps in the summer of 1923. The War Department is consummating plans for the summer camp activities throughout the country, by which it contemplates training 30,000 men this year. The purpose of the summer camps is to build up a civilian reserve army that could be called on in case of national emergency. Before an applicant can be enrolled he must undergo a preliminary medical examination and meet certain minimum physical requirements. Physicians who make preliminary examinations are asked to be accurate in order to save the government expense, as failure to meet the requirements results in rejection at the army camps.

Community Show at Army School

The Army Medical Field School held a community show at Carlisle Barracks, Pa, March 5-10 at which each department of the school presented exhibits. The technical library was thrown open, showing hundreds of volumes on medical and military tactics. The museum containing a valuable collection of miniature sanitary devices and appliances that were used by the American army in France proved an interesting exhibit.

Change in Triple Typhoid Vaccine

The following changes have been made in the manufacture and issue of triple typhoid vaccine at the Army Medical School.

1 The content of paratyphoid A and paratyphoid B bacilli has been reduced from 750 million each to 500 million each per cubic centimeter. The present composition of the vaccine is therefore 1 000 million typhoid bacilli 500 million paratyphoid A bacilli and 500 million paratyphoid B bacilli per cubic centimeter a total of 2 000 million per cubic centimeter.

2 The time of expiration has been extended from four to six months.

3 The vaccine will be issued in special rubber stoppered bottles as well as in ampuls.

Commercial firms are allowed a limit of twelve months on their vaccines, but the present time of expiration is four months in the United States and six months outside the country. The strength of the vaccine has been reduced in order to meet existing indications more.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Feb 19, 1923

Reforms in the Public Mental Hospitals

Considerable public attention has been directed to the administration of mental hospitals, which used to be termed lunatic asylums, by a severe attack on their administration by a physician (Dr Loman) who was a medical officer in one for a short period. He alleged gross cruelty and neglect of patients, which led the government to appoint a commission of inquiry, but he declined to give evidence before the commission, as he was not satisfied with its constitution. The commission made a report in which his graver charges were discredited, but it was admitted that he had called attention to certain matters which required reform and a number of recommendations were made. The following reforms have been recommended by the board of control (the official body which controls all administration): In classification, some account will be taken of the home conditions and surroundings from which the patient comes. In the appointment of superintendents, preference will be given to those who have obtained a diploma in psychologic medicine and who have served as house surgeon or house physician in a general hospital. The number of assistant medical officers will be increased. Every endeavor will be made to provide patients with occupations and, as far as possible, to arouse their interest. The question of authorizing payment to patients is under consideration. Visiting committees should consider the desirability of providing letter boxes in which patients can post their letters, and in every ward notice should be posted informing patients of their right to forward letters unopened to the authorities. The organization of after-care work needs to be strengthened and extended, with a view to facilitating the discharge of patients who, though not fully recovered, could dispense with institutional care if suitable conditions were provided. Notices should be placed in the waiting rooms of public mental hospitals to inform friends and relatives of patients of the provision of the lunacy act empowering them to apply for the discharge of a patient. Visiting committees should be strengthened by the cooperation of persons who have special qualifications and time to devote to the work. The provision of facilities for the early treatment of incipient mental disorders without certification is recommended as of great value.

Insurance Medical Service

Much dissatisfaction with the insurance medical service is being expressed by the representatives of friendly societies and echoed in a section of the press. Many complaints are made of grudging and perfunctory attendance such as the writing of prescriptions without even looking at patients. On the other hand, some patients state that they have received every possible care. The fact that the physician is not paid for each attendance but receives an insurance fee whether the patient is ill or well, is largely the basis of the trouble. The stimulation of the fee paid or payable for each attendance is gone. Moreover, as the panel patient has to pay nothing additional, no matter how often he seeks advice, there is a strong tendency for the physician's time to be wasted in attendance on patients with trivial or imaginary complaints who would never trouble about them if they had to pay. Such persons deserve only perfunctory treatment, but this very practice tends to become a habit especially in times of rush when the time required for patients who are really ill is wasted by those who are not. Here have the weak

point of the insurance acts. The less the time devoted to a panel patient, the better the rate of pay, for the payment remains constant. The more conscientious the physician, the worse the rate of pay. As a remedy, paying according to attendance is suggested, but there is an equally crucial objection to this. In private practice, it is to the interest of the patient to see that the physician does not run up a bill larger than is necessary. Under the insurance system, the patient has no interest whatever in the amount of the bill, and indeed, as stated, often employs the physician unnecessarily. The funds would be completely at the mercy of any physician who desired to help himself.

The time is approaching when the present contract with the panel physicians expires. Apparently, in anticipation of this, the British Medical Association has called a conference of its insurance acts committee, with representatives of the friendly societies. In an opening address, Dr H B Brackenbury, chairman of the insurance acts committee, who presided, said that this was the first plenary conference of those who worked under the insurance act. The service was now seen to be far too complicated, and it was still very incomplete. There were imperfections in those who operated under the acts and imperfections in the insured persons, who in some cases avoided the act or were indifferent to it, or failed to inform themselves as to its provisions and their duties under it. Yet the work improved, manifestly. Physicians as a whole no longer were antagonistic. Disciplinary action taken in certain cases had its effect on those who were less conscientious and zealous than they should be. The regulations had been in some respects simplified, and additional benefits were beginning to mature. The first subject discussed was "title to benefit." When an insured person has chosen a physician and been accepted by him, there is no difficulty. But a difficulty may arise when one who has not gone through this formality is taken ill. In some cases, physicians charge such persons for attendance as they would private patients. The most important subject discussed was with regard to the efficiency of service rendered. A representative of the friendly societies complained of insufficient waiting room accommodation resulting in overcrowding. In every insurance area, physicians should be available at any hour. If a particular physician was not available, it ought to be the responsibility of his servant to get into telephonic communication with another physician about an urgent case, it ought not to be left to the friends to go around to one physician after another in the hope of getting attendance.

Another complaint was that patients went on the lists of popular physicians believing that they would get personal attention, but when taken ill they never saw any one but an assistant. Physicians should not employ assistants. This objection was answered by pointing out that, in the interests of patients, newly qualified physicians required some training as assistants before they practiced on their own account. Some physicians had two doors, one for private, the other for panel patients. That should be abolished. On the part of the association, it was pointed out that, while no doubt there were "black sheep in every flock," the number of complaints in proportion to 13,500,000 insured persons was very small. In a discussion of the supply of drugs and appliances, a representative of the friendly societies remarked, quite truly, that a great deal had been heard about excessive prescribing, but what was really wanted was a campaign against excessive drugging on the part of the insured. Medicine had become a fetish. The chairman opened a discussion on the extension of services which he divided into (1) provision of diagnostic facilities and (2) institutional or specialist treatment. The former was much less expensive and more easy than the latter. There might soon be an extension of arrangements

for certain laboratory investigations and the use of the roentgen rays for examination of fractures and other conditions. Some approved societies have already supplied such extension, but the problem is to put it on a national basis. Although considerable antagonism, rising sometimes to acrimony, has existed between the representatives of the friendly societies and those of the panel physicians, the conference was marked by agreement rather than difference and was quite amicable.

Regulations with Regard to Condensed Milk

The ministry of health have made new regulations as to the labeling and composition of condensed milk. Every can must bear a label specifying its contents (for example, full cream or unsweetened), and stating the equivalent volume of milk (or skimmed milk) contained in the can. Every can of condensed skim milk must be labeled "unfit for babies." The name and address of the manufacturer must appear on the label. Any instructions as to dilution must be quantitatively accurate. Condensed milk must contain not less than the following percentages of milk fat and solids:

	Milk Fat Per Cent	All Milk Solids Per Cent
Full cream unsweetened	9	31
Full cream sweetened	9	31
Skimmed unsweetened		20
Skimmed sweetened		26

The regulations will come into force August 1, and will apply to all milk intended for sale for human consumption, whether produced in this country or imported.

PARIS

(From Our Regular Correspondent)

Feb 16, 1923

The Centenary of Agrégés in Medicine

Instruction in our medical schools is given by '*professeurs*' a title which, when strictly used, always signifies incumbency of a definitely established professorial chair, or by assistant professors, designated as '*agregés*,' who do not occupy such chairs. The system of *agreges* in medical schools was established just one hundred years ago, by a royal decree dated Feb 2, 1823. Since that time, the system has undergone many transformations. The principal change has tended to transform the *agregé* system with its essentially temporary character, into one of a more permanent nature. It may be mentioned that *agreges* are appointed for a period of nine

accordance with these decrees, many *agreges* in the universities of the provinces have been declared permanent incumbents of their posts, which is a fitting recompense for their labors and years of teaching.

In connection with the celebration of the centenary of the establishment of the *agregé* system Dr Maucclair, who is himself an *agregé* of the Faculté de médecine of Paris, gives in the *Gazette des hôpitaux*, the complete list of *agregés* appointed for Paris during the last hundred years. This list comprises a total of 406 *agreges*, 150 of whom were later appointed professors of the Faculté de médecine of Paris. Ten others were appointed professors on the provincial faculties and five in other educational institutions.

The Necessity of Supervision of Commercial Analytic Laboratories

In view of the continually growing number of private laboratories in which are made not only chemical analyses but also bacteriologic examinations and very important biologic tests, the necessity of some system of supervision to which attention was directed about a year ago by Dr Paul Salmon (*THE JOURNAL*, Jan 21, 1922, p 207), is becoming more and more manifest. The current number of the *Presse médicale* reports numerous examples of analyses impaired by errors or in which discordant results were given. A physician took a specimen of urine and divided it into three parts which he left with as many different pharmacists. The first reported a correct analysis: 34 gm of albumin and 42 gm of sugar. The second found 5 gm of albumin and no sugar, the third, 30 gm of sugar and no albumin. While this was serious enough the following case is more grave. A girl, aged 17 contracted a sore throat. Her father, a physician, took a smear and sent it to a well known pharmacist, who reported "numerous streptococci no bacilli." The father was not convinced and sent a new smear to the pharmacist every day, and every day he received the same report. One evening he found his daughter so ill that he became alarmed and asked the pharmacist whether he was quite certain about his report and the latter replied that he had not the slightest doubt as to its correctness and advised the injection of antistreptococcus serum. The father then went to a confrere residing in the neighborhood. This confrere was a hospital physician who had been for a long time director of a contract disease ward. He had never entered the patient's room when without examination he

Before a person should be allowed to make medical analyses, he should pass a series of tests and should then be furnished with a diploma. Furthermore, medical analytic laboratories should be placed under the supervision of a joint commission composed of professors chosen from the Facultes de medecine and the Facultes de pharmacie.

Reminiscences Connected with Pasteur

Dr J. A. Doleris, honorary obstetrician to the hospitals of Paris, publishes in the review *Gynecologie* a series of reminiscences connected with the life of Pasteur. Doleris was the first medical student to be admitted to Pasteur's modest laboratory and to be initiated, along with his many brilliant collaborators, all of them chemists, by Pasteur himself in the mysteries of micro-organisms. He was the author of the first doctorate thesis that came out of this bacteriologic laboratory and was defended before the Faculte de medecine of Paris. A few weeks after Pasteur presented to the Academy of Medicine his communication on the probable cause of puerperal fever, Doleris, who was then an intern at the Maternite, was performing a necropsy on a patient who had died from a puerperal infection, he then, for the first time, found himself brought into direct contact with Pasteur, who had been invited to be present and to collect certain specimens for study. What impressed Doleris most on this occasion was the pained expression that crossed the face of the eminent scientist, a laboratory man, who up to that time had studied puerperal infection only in animals, as he contemplated this human body as it lay on the bare slab in the low, dismal dissecting room. Pasteur could not help uttering words of compassion for this poor creature who, owing to an implacable disease, had sacrificed her life in the performance of her maternal duty. "*La pauvre femme! La malheureuse!*" he exclaimed, from time to time, as Doleris performed the necropsy before him and exposed the organs one by one, while Roux, who accompanied him, collected specimens of the pathologic fluids in the veins, the peritoneum and the fallopian tubes. The thesis of Doleris on the etiology of puerperal fever was received rather coldly by his critics. At the mention of bouillon culture mediums, Professor Depaul exclaimed scornfully, "What has all this cookery to do with puerperal fever?"

Let me call attention also to these characteristic lines of a letter that Pasteur wrote to Doleris a short time after the latter passed his doctorate. "You are about to enter, or, I may say, you have entered, the great field of practice. Seek to ascertain—but always exercising prudence and sound judgment—what part must be assigned to micro-organisms."

BERLIN

Feb 10, 1923

The Biologic and the Social Effects of Alcoholism

Dresel, professor of social hygiene in the University of Heidelberg, publishes in the *Zeitschrift für arztlich-soziales Versorgungswesen* a very interesting study on the biologic and social effects of alcoholism, from which I will cite passages. According to experiments carried out by several scientific investigators, the narcotic effect of alcohol depends on its degree of dilution. The speed with which alcohol is absorbed is reduced if taken along with food, and the body that is habituated to alcohol absorbs it more rapidly than one that is not habituated. Whereas other narcotics produce a deeper sleep alcohol has the opposite effect, sleep is, however, prolonged by alcohol. The sensation of hunger can be deadened by alcohol since small quantities of alcohol stimulate the activity of the stomach. The sensation of thirst, however, seems to be increased by alcohol, for otherwise it would be difficult to comprehend how habitual drinkers can

consume such large quantities of alcoholic beverages, very few persons would be able to drink an equal quantity of water. The abolition of inhibitions is effected only by small doses of alcohol. Small doses also facilitate the development of motor power and stimulate the will. Larger doses, however, impair the coordination of movements, and, according to the investigations of Ach, the psychologist of Konigsberg, lessen the power of comprehension in reading experiments, also the power of observation is reduced. The capacity to associate sounds is increased, which fact will explain why "poetic effusions" are so often produced under the effect of alcohol. The ability to add is often reduced, and the incoherence or flightiness of thought in habitual drinkers is well known. The power to perform muscular work is reduced by alcohol, although the subjects on whom the experiments were carried out stated that it was perceptibly easier to perform the work required when alcohol had been ingested.

The use of alcohol as a stimulant in sport activities is, therefore, contraindicated, on account of its weakening and other injurious effects. The feeling of increased warmth may also be regarded as a subjective deception. Large doses of alcohol cause a fall in the body temperature. The use of alcohol as a food is irrational, since the cost of a given caloric value is much higher in this form than from unextracted foodstuffs. According to the investigations of Professor von Gruber of Munich, a considerable waste of albumin occurs in the manufacture of beer. There is also considerable economic loss in the process of obtaining brandy from potatoes. The effect that abuse of alcohol exerts on disease and mortality is, in the opinion of Dresel (which accords with that of other investigators), difficult to estimate. So far, no specific injuries to the tissues or organs have been established with certainty as due to alcoholism, although it appears that many organic diseases occur more frequently in habitual drinkers than in persons who are temperate. The effects on animals that have suffered damages from experimental doses of alcohol cannot be applied without question to man. Even the frequent occurrence of cirrhosis of the liver does not prove an etiologic connection with alcoholism, for the bodies on which necropsies are performed do not furnish conclusive evidence as to the conditions that obtain in all dead bodies, much less as to conditions in the living.

One thing, however, appears certain, and that is that in habitual drinkers the small blood vessels undergo certain changes. Krapelin, the psychiatrist, of Munich, found among his patients with arteriosclerotic brain symptoms 71.5 per cent men, and of these, 47 per cent were habitual drinkers. Many cases of mental disease have a history of immoderate indulgence in alcohol. During the war, delirium tremens disappeared almost entirely. The results of conception during alcoholic intoxication have not, as yet, been definitely established. It is probable, however, that in chronic alcoholics the spermatozoa are directly injured. But whether constitutional inferiority, which, it is asserted, occurs frequently in the offspring of habitual drinkers, is due to direct injury to the germ cells of the parents through alcohol, or whether it is only the result of the hereditary transmission of a psychopathic constitution, which is relatively frequent in habitual drinkers, has not been decided as yet.

The investigation of causes with respect to disease and death in the callings most closely associated with the manufacture and distribution of alcohol (saloon keepers, waiters and brewers) encounters the greatest difficulties, as the high morbidity and mortality in these classes may be explained on other grounds. It is exceedingly difficult to differentiate injuries due directly to alcohol from other injuries, and, in Dresel's opinion it is, to a certain extent, an impracticable differentiation, for it must be remembered that alcoholism

seldom appears as an isolated evil, but is almost always associated from the start with some other social evil. Dresel regards this as the chief difficulty in combating injuries due to alcohol. He thinks that prohibition of alcohol will only partially solve the problem of relieving the public or the state from persons who are now alcoholics or have suffered injuries through alcohol, for it is certain that many of those who now apparently suffer shipwreck on account of alcohol would follow a downward course as the result of some other evil quite disconnected from alcohol. This applies also to the high criminality asserted to exist among habitual drinkers, as set forth by the Berlin investigator Baer. Dresel states that the question has now been raised why all heavy drinkers do not develop criminal tendencies. Dresel holds that alcoholism alone does not produce criminality, but that persons with psychopathic tendencies are inclined to combine alcoholism with criminality. The alcohol problem is so closely interwoven with the whole life of the people that researches on the existing social conditions among drinkers and in drinkers' families are more likely to shed light on the situation than studies on isolated biologic questions. The greatest damage to society is not caused by the degradation of the heavy drinkers themselves and by the disruption of their families (for their number is small compared with the total population), but lies rather in the spread of the habitual use of alcoholic beverages by the masses of the people.

Outbreak of Meat Poisoning

In the bath resort of Freienwalde, near Berlin, there occurred an outbreak of meat poisoning that affected several hundred persons. The symptoms had developed after eating horse meat, and several of the cases resulted fatally. It was ascertained that all the meat that had caused the poisoning had been purchased in the same shop. Necropsies on the victims revealed the presence of paratyphoid bacilli. It was discovered that the butcher had slaughtered and marketed six horses, three of which had harbored paratyphoid bacilli. Unfortunately, the official meat inspector had failed to discover the existence of the infection, and therefore suit has been brought against him for culpable negligence.

Personal

Professor Straub of Freiburg has been called to Munich to occupy the chair of pharmacology as successor to Professor von Tappeiner, who is to retire, April 1, on account of his advanced age.

Marriages

WALLACE WILLIAM HOLLEY, Warren, Minn., to Miss Pearl

Deaths

George Frank Lydston ☉ Chicago, Bellevue Hospital Medical College, New York 1879, died in California of pneumonia March 14. Dr. Lydston was born at Tulumne, Calif. in 1858. After his graduation he became intern at the Charity Hospital, New York, and later resident surgeon of the New York State Immigrant Hospital. He was lecturer on genito-urinary diseases in 1882 and later professor of genito-urinary surgery and venereal diseases in the College of Physicians and Surgeons, Chicago. He was author of numerous books of both scientific and literary character, including a 'Text-book on Genito-Urinary and Venereal Diseases,' on the 'Surgical Diseases of the Genito-Urinary Tract,' and on 'Impotence and Gland Transplantation.' Most of his recent contributions to medical literature were devoted to the possibilities of securing rejuvenation by transplantation of glands. Among his contributions to general literature were a social text on diseases of society, a play 'The Blood of the Fathers,' and several novels, such as 'Over the Hookah,' 'Poker Jim,' and 'Trusty 515.' Dr. Lydston was a man of aggressive personality and a writer of ability, with keen and satirical humor.

Asa Wilder Daniels, Pomona, Calif., Medical College of Ohio, Cincinnati, 1867, founder of the Southern Minnesota Medical Society, Civil War veteran, member of the state board of health, for more than half a century a practitioner in Minnesota, served in the Indian outbreak of 1862, aged 94, died, February 27, of acute bronchitis.

Charles Columbus Simmons, Bunker, Mo., Jefferson Medical College of Philadelphia, 1894, member of the Missouri State Medical Association, served in the M. C. U. S. Army during the World War with the rank of captain, aged 53, died February 21, at St. Luke's Hospital, Kansas City, following a long illness.

Carroll Kendrick, Kendrick, Miss., University of Louisville Medical Department, Louisville, Ky., 1873, member of the Kentucky State Medical Association, member and at one time president of the state board of health, for thirty years a member of the state legislature, aged 70, died, February 17, of heart disease.

William M. Leszynsky ☉ New York, Medical Department of the University of the City of New York, New York, 1878, member of the American Neurological Association and the New York Neurological Society, on the staffs of the Harlem People's and Lebanon hospitals, aged 66, died, March 3, of pneumonia.

Charles Williamson Perkins, Chester, Pa., Hahnemann Medical College of Philadelphia, 1870, practitioner in Chester for nearly half a century, former president of the city board of health, on the staff of the Crozer Hospital, aged 74, died, February 24, at Hot Springs, Ark., of diabetes mellitus.

Frederick Schaffler Osterheld, Ovid, Mich., Detroit College of Medicine and Surgery, Detroit, 1919, member of the Michigan State Medical Society, served during the World War, aged 34, was killed February 22, when the automobile in which he was riding was struck by a train.

William Franklin Faison ☉ Jersey City, N. J., University of Virginia, Department of Medicine, Charlottesville, 1892

James H Fonger, Gary, S D , Minneapolis College of Physicians and Surgeons, Minneapolis, 1900, aged 48, died, January 28, at the John Swenson Memorial Hospital, Canby, Minn, of acute alcoholism

Roy Granbery, New York, University of Louisville Medical Department, Louisville, Ky, 1901, passed assistant surgeon, U S Public Health Service, aged 42, died, February 27, of bronchopneumonia

Wilson Charles Dingman ⊕ Poughkeepsie, N Y , Medico-Chirurgical College of Philadelphia, 1906, chief surgeon to the Mansion Square General Hospital, aged 50, died, February 27, of pneumonia

Frank C Simpson, Louisville, Ky , University of Louisville Medical Department, Louisville, 1880, aged 65, died, February 25, at the Norton Memorial Infirmary, of pneumonia, following an operation

Mary Agnes Dangel, San Francisco, University of Michigan Medical School, Ann Arbor, 1897, aged 56, died, February 25, at St Luke's Hospital, of acute dilatation of the heart and myocarditis

George W Koepfel, Milwaukee, Milwaukee Medical College, 1901, formerly on the staffs of the Milwaukee County and Emergency hospitals, aged 44, died, February 18, of bronchopneumonia

Howard Bell, Delhi, N Y , Medical Department of the University of the City of New York, New York, 1884, aged 68, died, February 17, from a bullet wound, presumably self-inflicted

William D Crocker, Warsaw, N C , Louisville Medical College, Louisville, Ky , 1887, member of the Medical Society of the State of North Carolina, aged 58, died, February 24, of influenza

Enoch Knabb, Springfield, Mo , Keokuk Medical College, Keokuk, Iowa, 1895, member of the Missouri State Medical Association, aged 55, died, February 19, of cerebral hemorrhage

Arthur Windes Condict, Dover, N J , University of Michigan Medical School, Ann Arbor, 1882, member of the Medical Society of New Jersey, aged 63, died suddenly, February 16

Charles Edward Dampier ⊕ Crookston, Minn , University of Michigan Medical School, Ann Arbor, 1878, aged 68, died, February 20, at the Bethesda Hospital, of pneumonia

Thirza La Vence Gregory, Englewood, N J , Woman's Medical College of the New York Infirmary for Women and Children, New York, 1892, aged 60, died, February 19

James Edward Peltier, Newaygo, Mich , Michigan College of Medicine and Surgery, Detroit, 1897, member of the Michigan State Medical Society, aged 59, died, January 8

Joseph Daniel Daly, Brooklyn, Illinois Medical College, Chicago, 1899, on the staff of the Brooklyn Home for Consumptives, aged 46, died, February 26, of pneumonia

Andrew Joseph McCusker, Glenwood City, Wis , Detroit College of Medicine and Surgery, Detroit 1918, aged 31, died, February 2, of pneumonia, following influenza

Elmer Ellsworth Reed, Kansas City, Mo , College of Homeopathic Medicine and Surgery of the Kansas City (Mo) University 1897, aged 56, died, February 17

Walter de La Montanye Hill, Everett, Pa , Jefferson Medical College of Philadelphia, 1900, died February 9, at the Allegany Hospital, Cumberland, Md of pneumonia

Howard L Garner, Rhinelander Wis , Milwaukee Medical College 1901, served in the M C U S Army, during the World War, aged 44, died recently of pneumonia

J Ambrose Armes, Leitchfield, Ky , Louisville Medical College Louisville 1896 member of the Kentucky State Medical Association aged 52, died recently, of carcinoma

Charles Lamb Clark, St Paul, Medical Department of Columbia College New York 1878, formerly deputy coroner, aged 66 died February 16 of bronchopneumonia

Elias V B Kendig, Hayesville Ohio, Medical Department of the University of the City of New York 1864, Civil War veteran aged 84 died February 21, of senility

Emory W Bruner, Jeffersonville Ind , Miami Medical College Cincinnati 1867 Civil War veteran, aged 81, died, February 27 of chronic nephritis and uremia

Nelson Peck, Clarksburg W Va University of Maryland School of Medicine Baltimore 1886, aged 74, died, February 16

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

WHAT TO DO FOR A HIGH TEMPERATURE

Helpful Suggestions Sent to the Malingering Maid of Michigan

Elsewhere in this issue appears a report of a case of malingering that has been given much publicity in the daily press for the past few weeks. A young woman of Escanaba, Mich, was reported as having a temperature that, from the newspaper reports, ranged all the way from 111 F to the limit of a clinical thermometer. Investigation showed that the patient "faked" the temperature by the stealthy use of a small hot-water bottle.

During the time that this case was a nine days' wonder the patient's family received many suggestions. Most of these came by letter, some by telegraph. The family very courteously turned over to THE JOURNAL's representative some of the would-be-helpful messages that had been received. The following brief extracts from this mass of correspondence may prove of interest.

From Oakland, N J, came the suggestion that the patient be given "as much ice cream (vanilla or other mild flavor) as she will swallow all day long and at night, too. It may help her a lot."

The Rose Salatorium Co, Rome City, Ind, urged the patient to take the "Vitamin Salt Food," "the salt that builds you up" (\$1.00 per pound) and to purchase (price \$1.50) the book "What to Eat and How to Prepare It." The latter, it seems, is invaluable, after getting it "you can live healthily ever after, for it tells you how."

CHIROPRACTORS—OF COURSE

An anonymous Milwaukee friend suggested that the patient have a chiropractor give "some spinal adjustments." The writer (evidently a woman) said they could take her word for it "as we always have chiropractors work on our babies when ill." And, as a parting shot "Of course the medical men will be against this, but just try it just once."

A prepaid telegram

Miss \ ———, Noted Fever Case Escanaba, Mich

You have tried the rest now try the best viz your local chiropractor. I am a chiropractor and I know what chiropractic can do. Stop flirting with death and call on a chiropractor immediately and wire or write me the outcome. I am paying for this message in hopes of saving your life. Yours for health

E D HEMPHILL D C Chiropractor, Saginaw Michigan

From Cleveland, Ohio, came an unsigned letter from a man who said that he had had a similar high temperature until some one told me of a mechano-therapy doctor." One treatment cured him! As a sporting proposition, he added

To show you how sure I am of him curing you I'll just bet my whole week's pay and more."

William E Gates, Shirley, Ill, wrote "Having read of your exceptional case in the News Papers and being an Astrologer I would like very much to have your birth date. If I find anything that will benefit you, I will send it." Mr Gates even enclosed a stamped addressed envelop.

An anonymous letter from Toledo Ohio enclosed the card of J A Aldridge Divine Healer." The letter detailed some of Aldridge's marvels and expressed the wish that the patient might come to Toledo and see the healer." It closed with the statement "Do wish your doctor could be wright with him. They mite make good to Be togethah."

A Chicago woman insisted that 'she never saw or heard of a fever but what I could heal in a few minutes when I had half a chance and even when I don't have even when they are supposed to be dying." The writer modestly mentioned that she had 'healed seventeen cases of consumption and four

were dying and several cancers and tumors in a few minutes when dying, two in one visit"

One W L Brown of New York City sent a letter by special delivery "I feel," wrote Brown, "that I can by an application that has been revealed to me for years and had been successfully applied in cases somewhat similar [sic!] to yours," bring the patient back to normal "There isn't the least harm in it my revelation is from the external side only" Mr Brown explains that it is a "gift"

On the stationery of the National Home for Disabled Soldiers, Leavenworth County, Kansas, came a letter from one J H Woodruff, who seems to call himself "i John the Prophet" It read

My Dear Miss Lady you have one of the New Diseases that the other Prophets spoke a Bout that Would Baffle the Doctors You Place this Letter on your head and Put on Bonnet or hat and Were it $\frac{1}{2}$ hour and your Fever Will go down if you have any Faith in god and i Will do the Balance

A Bostonian, with nothing to sell, was quite sure that the patient's fever could be brought back to normal if she would "take wild cherry bark, steep it in hot water Ad a little sugar and take a wine glass every two hours until you are normal"

"Dr H F A Meissel Prof of N S of L E" Terre Haute, Ind, wrote, enclosing his business card and an advertising poster Mr Meissel's specialty is "Nature's Tissue Cell Food" which "cures any ailment of man or beast promptly from the slightest cold to the worst ailment ever named" Mr Meissel recommended "Nature's Tissue Cell Food" No price mentioned

A physician in a Wisconsin town wrote that "at the risk of being called an egotist" he was certain that he knew the cause of the patient's superheated condition "It is a dis-functioning of your ductless glands that means the thyroid, the pituitary and the supra adrenal glands" The doctor went on to state that these glands "secrete a serum" that "serves to maintain an equilibrium" [sic!] He stated that he had taken the liberty of writing to the editor of an Escanaba paper giving his views on the case and had sent the editor "a prescription composed of ductless gland secretions to be administered artificially to stimulate glands to a normal function" If the patient's physician would but give her this prescription, everything would be well

Correspondence

"THE EARLIEST RECOGNITION OF APPENDICITIS—AGAIN"

To the Editor—Dr Leonard A Mackall (THE JOURNAL, February 24 p 572) says that the first case of appendicitis is that described by Heister in 1753, and that this fact was first pointed out by Dr R S Rudolf of Toronto in the *Canadian Medical Association Journal*, May, 1913 In the third edition of Dr Deaver's book on appendicitis, published in Philadelphia by Blakiston in 1905, I revised the chapter on the history of appendicitis and there at page 16 Heister's case is noted and at page 11 a case of appendicitis described by Fernellius in 1567 is described The original references to all these cases were consulted in the library of the College of Physicians of Philadelphia

ASTLEY P C ASHHURST, M D, Philadelphia

NOSTRUM GUZZLING A CENTURY AGO

To the Editor—The following quotation may shed some light on the status of the 'Propaganda for Reform' a century and more ago It is from "A View of the Nervous Temperament," by Thomas Trotter, M D Late Physician to His Majesty's Fleet, etc, etc, first published in London in 1806

All nervous persons are uncommonly fond of drugs and they are the chief consumers of advertised remedies which they conceal from their medical friends Among some well meaning people this inordinate desire

for medicine has frequently become of itself a disease With many of them physic to be useful must be clothed in mystery and the moment a discovery is made of the composition the confidence is lost Medical attendants have too often brought this punishment on themselves Were they unanimous in combating the prejudices of mankind by candour and openness of conduct by a fair avowal of the imperfections of their art and the honest confession that the articles of *Materia Medica* form but a small portion of its resources they would not so frequently see their commands disregarded or learn that their compounds have been thrown out of a window This is the only way in which I can account for so many persons of good sense and discernment consigning themselves and families into the hands of impudent and illiterate quacks"

The asterisk refers to this footnote

The duty on quack medicines at this time is estimated at upwards of £300 000 annually From this it may be supposed that ignorant pretenders to medicine take not less than *two millions* out of the pockets of the community!!

GEORGE BEVIER, M D, Philadelphia

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed Every letter must contain the writer's name and address but these will be omitted on request

CATHARSIS OF NURSING MOTHERS

To the Editor—1 Please mention a list of cathartics which when ingested by the nursing mother are known to appear in the milk. 2 Can you advise what measures may be taken to secure catharsis in a nursing mother suffering with chronic constipation? Kindly use my initials in publication H J O

ANSWER—1 It seems impossible to furnish a list of cathartics as requested by our correspondent So far as is known no chemical work has been done on this question The fact, however, is abundantly substantiated that many cathartics taken by the nursing mother will affect the suckling infant It would be much easier to mention those evacuant measures that will not affect the child when taken by its nursing mother, thus answering at the same time the second question

2 A coarse diet, with fruit and vegetables predominating and the ingestion of an abundance of water and of fat will tend to minimize the necessity for cathartics Bran, though a dietetic measure, is frequently so active in favoring evacuation that it needs to be mentioned especially One tablespoonful of it may be taken three times a day with meals If the diet is insufficient liquid petrolatum in tablespoonful doses morning and evening will probably soften the stool and favor its passage Abdominal massage and gymnastics would be advised in case medicinal treatment failed Should mechanotherapy not be available, or when the chief delay occurs in the last portion of the large bowel, then evacuant enemata of soapsuds or saline solution will be effective

INFLUENZA GRIPPE AND FLU

To the Editor—Please tell me what is the opinion of those best qualified to know concerning the relationship of the recent epidemic of illness in Chicago and the so-called Spanish influenza of 1918 I am far from clear about classifications and assume that many *coryzas* rank as influenza in the newspaper statistics What relation does our prewar *la grippe* bear? In England it has long been usual to call *coryza* flu Are we not adopting that custom? J W W

ANSWER—It seems that most physicians are inclined to regard the recent epidemic of respiratory infection in Chicago as one of influenza and as identical with the great epidemic of 1918 At present the main reason for this impression no doubt, is the similarity of the two outbreaks in symptoms and complications It is perhaps too early for reports of systematic bacteriologic and anatomic observations and it is possible of course that such studies may reveal peculiarities in the present epidemic that will suggest a distinctive etiology, but as yet nothing of that sort has been intimated Undoubtedly, various infections may cause *coryza* as well as other common symptoms and lesions and in view of the tremendous significance to human welfare of the recent influenza pandemics, it is not strange that the newly coined 'flu' should be crowding out older designations for what may be distinct diseases that are more or less similar in their manifestations So long as the causative agents of influenza and similar diseases remain obscure precise differentiation on the etiologic basis of outbreaks such as referred to in our correspondent's letter probably cannot be made

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

IDAHO Boise April 4 Dir Mr Harry L Fisher Boise
MAINE Portland March 13 14 Act Sec Dr Adam P Leighton,
192 State St Portland
MONTANA Helena, April 3 Sec, Dr S A Cooney Power Bldg,
Helena

THE STATUS OF GRADUATE MEDICAL EDUCATION IN THE UNITED STATES IN 1922-1923

Report to the Council on Medical Education and Hospitals
of the American Medical Association by a Special
Committee on Graduate Medical Education*

READ BY THE CHAIRMAN

LOUIS B WILSON, M D

Director Mayo Foundation of Medical Education and Research

ROCHESTER MINN

Since October, 1922, the Special Committee has attempted a survey of the present status of graduate medical education in the United States. The chairman of the Special Committee and the secretary of the Council have personally visited most of the schools in the United States which announce opportunities for formal graduate medical study, and a number of universities which provide opportunities for formally registered graduate study in preclinical branches, and opportunities for informal graduate study through internships, residencies, and so forth. In addition, a few hospitals that provide special internships in ophthalmology, otolaryngology and rhinology and dermatology have been visited.

An attempt has been made to collect, in each instance, information concerning the corporate character of the institution and its relationships to other institutions, its financial resources and annual expenditures, its teaching resources in laboratories, hospitals, dispensaries, libraries and museums, the extent and general character of its teaching staff, its standards for admission of students, the name, home address, medical school and year of graduation of each student enrolled in the institution during 1922, the length and character of its courses of study in various fields, its methods of determining and recording the progress made by its students, and the character and form of certificates granted by the institution.

PROGRESS SINCE LAST SURVEY

In general it may be said that there has been a very decided improvement in the general character of the graduate study of medicine in the United States since the committee's preliminary survey in December, 1919. However, there still remain institutions in which the conditions are almost inconceivably bad, though in others work on the highest plane of university graduate study is in progress. The Universities of Minnesota and Pennsylvania, the New York Post-Graduate School and the Universities of Illinois, Harvard and Tulane have made the greatest advances in the organization of their facilities for graduate study in clinical branches. Chicago (Rush Medical College), California and Columbia universities have formulated plans for graduate study, and have already begun work in certain clinical fields, or expect to do so in the near future. Several other schools, as for example Johns Hopkins Medical School, and Bellevue Medical School, without general plans are giving opportunities for graduate work in a few clinical fields.

*The committee consists of Drs LOUIS B WILSON, Chairman, Rochester, Minn.; JOHN M DODSON, Chicago; ALFRED C EYLESKYMER, Chicago; VICTOR C VAUGHAN, Chicago; J M T FINNEY, Baltimore; EDWARD JACKSON, Denver; JAMES EWING, New York; WILLIAM PEPPER, Philadelphia; and ex-officio ARTHUR DEAN BEVAN, Chairman and A P COLWELL, Secretary of the Council on Medical Education and Hospitals.

OPPORTUNITIES FOR ADVANCED STUDY IN PRECLINICAL FIELDS

In a number of the university medical schools, opportunities for graduate study in the preclinical branches have long existed. Usually these opportunities are a part of the graduate school of the university in which the students are registered. As far as the committee has been able to determine, there has been no material increase in the number of graduate students availing themselves of these opportunities, except at Johns Hopkins and the University of Minnesota.

The opportunities for graduate study in preclinical laboratories and in informal or short courses in clinical fields in the Universities of Colorado, Chicago, Northwestern, Indiana, Iowa, Maryland, Michigan, Washington, Nebraska, Pittsburgh, Western Reserve and Virginia have been surveyed only through correspondence or the school bulletins.

SCHOOLS OF PUBLIC HEALTH

The graduate work in the school of public health in the Universities of California, Pennsylvania, Harvard, Michigan, Yale, Johns Hopkins, Albany, Bellevue and Wisconsin have not been surveyed. This has not been because your committee was not interested but because it felt that this work was so well organized in the institutions named that for the time being a survey might be omitted.

ADVANCED STUDY IN CLINICAL FIELDS

Any discussion of the general character of graduate work provided by medical schools must take into consideration the demands from graduate students. Broadly speaking, these demands come from two groups of physicians: first, those desiring to fit themselves for practice of some special field of usually clinical medicine and, second, those desiring to improve themselves in general practice or in the practice of a specialty in which they are already engaged.

The first group consists largely of recent graduates who wish to fit themselves in a special field, either preclinical or clinical, and usually without engaging in general practice as a means of livelihood in the meantime, or of older graduates who have been in general practice for several years and who wish to fit themselves for, usually clinical, practice in some special field, using their experience in general medicine as a basis for their further study. The larger number of graduate students in both of these groups are still obtaining their preparation informally in advanced internships, residencies, assistantships, apprenticeships and various minor teaching positions in medical schools and the hospitals attached thereto. Their ability to practice in their chosen field is usually a matter of self-determination, occasionally aided by advice from their immediate superiors. At present, public recognition of special attainments in limited clinical fields are available to men so prepared only through membership in one or more of the various specialists' associations, as the American College of Surgeons and the American Ophthalmologists. A few universities, notably the Universities of Minnesota and Pennsylvania, now have their opportunities well organized for such preparation in clinical fields, including supplementary study in supporting preclinical fields, and recognize the graduates' attainment of proficiency by the granting of advanced degrees.

The committee recommends that graduate students of either of these two types, as well as medical schools contemplating the provision of opportunities for their preparation, should study carefully the recommendations of the various subcommittees in the special fields of medicine presented before this Council at its 1921 meeting.

While the granting of certificates or advanced degrees for work of the character described above must be left to the discretion of the institutions providing the opportunities, your committee believes that if any form of advanced degree or diploma-like certificate which may be used for wall display be granted the principles enumerated later in this discussion should be followed.

The second group of physicians desiring to make further preparation either in general practice or in some special clinical field in which they are already engaged includes men and women of all degrees of preparation, from the most meager to the most advanced. They ask for opportunities for

study ranging from a casual visit to a clinic, a few days or a few weeks of intensive instruction, to a year of laboratory or clinical experience. As a result, the provision of opportunities which they may properly take advantage of without impossibly long interruptions of the practice presents the most complicated problem. At the outset your committee recognizes the very great need for continuation study, aside from that obtainable in daily practice and through personal reading, by the general practitioner and the specialist. New developments in diagnosis and treatment must be studied, and additional skill in diagnostic and operative procedures obtained. Unfortunately, the period which the practitioner can usually afford to take is too frequently so brief that his instructor who is responsible for the care of patient does not feel warranted in relinquishing any of that responsibility to him. The instruction, therefore, must usually be limited to lectures, demonstrations and laboratory work.

One institution, not named, grants such a certificate after one week of study. After careful consideration, your committee believes that the granting of diplomas or certificates which may be used for self display, to any except those whom the institution knows to be proficient in a particular field, is fundamentally wrong. It is a matter of fact that these certificates are certificates of attendance only. Though this may be true, since the name of the student and the name of the specialty are usually stated in such a manner as quickly to catch the eye of the observer, it is held out that the public in most instances does not really distinguish between such a certificate of attendance and a certificate of proficiency in the specialty named. Hence they assume that the physician who displays such a certificate on his wall is truly qualified to practice the specialty named. The often felt impulse to call all the more to mind if the certificate is that the name of one well known physician is on it does not

2 Records—Records should be kept by each institution showing (a) the preliminary and professional entrance qualifications of every student, which should be verified by documentary evidence, (b) the subjects for which he is enrolled, (c) evidence of his faithful attendance at his work, (d) whether or not an advanced degree or diploma-like certificate was granted, and (e) especially evidence of the student's proficiency as demonstrated by his routine or research work, examinations or otherwise

3 Teachers—The school should be supplied with a corps of skilled teachers responsible for the work in all subjects in which opportunities for study are announced. This should include teachers for essential review or advanced work in the preclinical sciences, as well as those who have in charge work in clinical subjects. The teaching staff should be made up of graduates of or teachers in Class A medical colleges, or of high grade educational institutions. The faculty should be organized under the various teaching departments in which work is offered with a competent professor at the head of each department.

4 Laboratories—The school should have ample laboratories to provide proper review or advanced work in the preclinical sciences essential for the specialty or specialties in which opportunities are offered.

5 Clinical Material—The school should have either a large outpatient clinic with 100 or more patients each day, or a teaching hospital with a daily average of 200 or more patients, or, if teaching is limited to a single specialty, a hospital of not less than twenty-five patients daily, or both such dispensary and hospital. In brief, it should have sufficient clinical material to enable it to provide satisfactory clinical study in the specialty or specialties for which opportunities are offered.

6 Library and Museum and Special Apparatus—Unless the graduate school otherwise has the convenient use of a good medical library, it should have a medical library of its own. This should include an ample supply of modern text and reference books, files of bound medical periodicals, and the essential indexes. It should also receive regularly thirty or more standard medical periodicals, the latest numbers of which should be on tables or in racks where they may be easily accessible to the graduate students.

The school should be supplied with adequate museum facilities, including anatomic and pathologic specimens, such as can be used for study by graduate medical students. It should also be supplied with adequate special apparatus, such as stereopticons, balopticons, photomicrographic outfits and roentgen-ray equipment.

7 Annual Announcements—The graduate school should publish annually announcements, bulletins or catalogues, giving detailed information in regard to its teachers, laboratories, dispensaries and hospitals, and outlines of the various opportunities for study offered, as well as a complete list of the students enrolled during the last preceding year, showing their medical schools and years of graduation, the subjects for which they were registered, and to whom advanced degrees or diploma-like certificates were granted.

8 Type of Institutions Not Acceptable—Work in schools owned or controlled by individuals or by corporations conducted for profit, or work given in hospitals owned or controlled by individuals is not eligible for the approval of the Council on Medical Education and Hospitals.

No institution the name of which indicates a specialty or group of specialists will be considered as acceptable unless it has an adequate number of skilled teachers and ample laboratory or clinical facilities, and offers opportunities for study sufficiently well organized and thorough to permit the students to acquire a reasonably complete knowledge and skill in that specialty.

9 Advanced Degrees, Diplomas, Certificates—No advanced degree, diploma or diploma-like certificate should be granted for a period of study extending over less than one college year of at least thirty-two weeks in length and which includes at least six hours of actual study each day, and unless scholarship records of the students granted such certificates

show that they have, throughout the period, faithfully attended to their studies, and unless reasonable tests show that they have faithfully and satisfactorily completed the work for which they were registered.

CLASSIFICATION OF GRADUATE MEDICAL SCHOOLS

The classification of schools according to these principles and according to their present status is a complicated problem, largely because of the great variation in the purposes and length of the courses offered. Indeed, for the present it seems necessary to ignore both these factors and to consider only the observation of entrance requirements, the provision of adequate material, personnel and organization to accomplish properly the work advertised, a proper guaranty of stability and responsibility in the institution, and the protection of the public from unwarranted certification of specialists.

In accordance with the foregoing principles, your committee recommends the following classification on the present status of the graduate schools inspected.

A-1 Those which have adequate equipment, which are furnishing acceptable graduate courses of instruction in all the various specialties, and which grant advanced degree diploma-like certificates only to students who are qualified to receive them.

A-2 Those which have adequate equipment, which give acceptable course in one or two specialties, and which grant advanced degrees or diploma-like certificates only to students qualified to receive them.

B-1 These which have limited equipment but which grant no advanced degrees or diploma-like certificates, or if so, only to students qualified to receive them.

B-2 Those which have reasonably good equipment but which are overgenerous in granting advanced degrees or diploma-like certificates to students who have not secured adequate qualifications.

C-1 Those which are (a) inadequately equipped, or (b) are not properly organized, or (c) are not conducted in a satisfactory manner, or (d) grant advanced degrees or diploma-like certificates on courses which are inadequate to warrant such certification.

C-2 Those which offer courses in any specialty which are too short to insure any reasonable degree of efficiency in any specialty, or which give advanced degrees or diploma-like certificates for such unduly brief courses.

Ohio December Examination

Dr H M Platter, secretary, Ohio State Medical Board, reports the oral, written and practical examination held at Columbus, Dec 6-8, 1922. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Of the 25 candidates examined, 23 passed and 2 failed. The following colleges were represented.

College	PASSED	Year Grad	Per Cent
Yale University		(1922)	89.9
Howard University		(1921)	80.5
Chicago College of Medicine and Surgery		(1916)	81.7
Hahnemann Medical College and Hospital Chicago		(1922)	83.6
Loyola University		(1918)	75*
Northwestern University	(1922)†	81.5 90.2	(1922) 88.5
University of Louisville		(1916)	83.7
Harvard University		(1922)	86.4, 87, 90.7
Eclectic Medical College		(1905)	76.9
Jefferson Medical College	(1921)	82.7	(1922) 85.1
Temple University	(1919)	91.1	(1921) 77.1
University of Pittsburgh		(1922)	90.1
Meharry Medical College		(1908)	75†
University of Vienna Austria		(1915)§	82.5
University of Szeged Hungary		(1912)§	82.8
University of Naples Italy		(1919)§	77.1

FAILED

University of Naples Italy (1914)§ 52 (1921)§ 41.3

* This candidate was given 1.9 per cent credit for years of practice.

† These candidates have finished the medical course and will obtain the M.D. degree after they have completed a year's internship in a hospital.

‡ This candidate was given 2.4 per cent credit for years of practice.

§ Graduation not verified.

Book Notices

PERSONAL HYGIENE APPLIED By Jesse Feiring Williams A B M D Associate Professor of Physical Education Teachers College Columbia University Cloth Price \$2.50 net Pp 412 with illustrations Philadelphia W B Saunders Company 1922

This book is a serious attempt to present to the intelligent public, and particularly to the college student, a comprehensive survey of health in education and education in health. It is the author's belief that the important factor of health in life involves not only the presentation of rules of health, but also bringing into contact with such rules the deep and overflowing source of human action where ideals, ambitions, prejudices and hopes are born. In the first five chapters, therefore, the author considers the meaning of health, the health problem, intelligence and ideals, the approach for knowledge of health, and science and attitudes. In these chapters he places clearly before the reader the importance of rationality in health as well as in any other factor in human life. His definition of health is the quality of life that renders the individual fit to live most and to serve best. In other words, health for health's sake is not a satisfactory definition. In his chapter on science and attitudes he discusses the various cults and sects which are making inroads into the health field. Here again his statements are well founded on statistics. His judgments are sincere and careful, and his illustrations are attractive and convincing. In the remainder of the book various chapters are devoted to special hygiene of the various parts of the body, divided by systems. These chapters are wholly practical, and they are full of excellent devices for the individual who is seeking didactic and reliable information. The book is one which the physician may safely recommend to his patient.

MEDICAL AXIOMS APHORISMS AND CLINICAL MEMORANDA By James Alexander Lindsay M A M D F R C P Professor of Medicine in the Queen's University of Belfast Cloth Price 6 shillings net Pp 192 London H K Lewis & Co Ltd 1923

The author has here collected axioms and brief statements concerning the diagnosis and treatment of various conditions. The statements are taken from his own experience and also from the experience of several hundred ancient and modern authors. The axioms are thought-provoking and instructive. Any one of them is the text for a complete paper, and probably says in a few words what most authors would require a paper to bring out. A few specimens are quoted.

Never believe what a patient tells you his doctor has said.—*William Jenner*

The first qualification for a physician is hopefulness.—*James Little*
Give your prognosis in heart disease on the best supposition treating your patient on the worse.—*Clifford Allbutt*

Chorea is commoner in the more emotional sex and at the more emotional age.—*Hughlings Jackson*

I am of the opinion that our first duty is to inquire whether a thing be or be not before asking wherefore it is.—*William Harvey*

ALGUNOS ASPECTOS DE LA PSICOLOGIA DEL NIÑO Por el Doctor Honorario F. Delgado Fundador del Seminario Psico-Pedagógico. Con Prologo del Doctor William A. White Superintendent of the St. Elizabeth's Hospital (Washington D C) Paper Pp 84 Lima Peru Imprenta la Opinion Nacional 1922

Not only have the psychoanalytic waves washed the shores of every civilized country, as stated by Dr. White in his preface, but they have splashed everything on land. This event, however, holds no terrors for at least one of the leading South American psychiatrists the author of this ambitious essay on "Some Aspects of Child Psychology." He even desires to widen the scope of Freud and Jung's pet conception. After reviewing the nature, mental development, personality and tendencies of the child, Dr. Delgado sees a chance to supply the deficiencies of education through the introduction of psychoanalysis in the schools, and the teaching of what he calls philosophy of life. All may agree with the Peruvian professor as to education being sorely in need of reform. Few will endorse his medicine for the ailing patient. Most psychiatrists will remain skeptical as to the far-reaching good to be derived from a school psychoanalysis service. Nor can one share the author's optimism as to the

reinterpreted message of "Christ, Lao-Tse, Heraclitus, Euripides, Plato, Horace, Seneca, Plutarch, Sankara, Montaigne, Shakespeare, Goethe, Nietzsche and two dozen others" creating a race of supermen. It would take indeed a superman—or a psychoanalyst—to interpret the message even without trying to harmonize the doctrines, of, say, Horace the Epicurean poet, and Seneca the stoic philosopher, or Euripides the cynical dramatist, and Plato the idealist sage, or Lao-Tse and Nietzsche. The hopelessness of his plan is shown by the assertion that Germany became first among nations through her putting into practice the axiom of Dürck-Kennen zum Koennen.

OTO RHINO LARYNGOLOGY FOR THE STUDENT AND PRACTITIONER By Dr. Georges Laurens. Authorized translation by H. Clayton Fox F R C S. With a foreword by Sir J. Dundas Grant M A M D F R C S. Second edition. Cloth Price \$4.50 net Pp 350 with 584 illustrations. New York William Wood & Co 1922.

The first edition of this work was spoken of in these columns as the ideal textbook for practitioners and students, because of its essentially practical character. In the present volume none of this value is lost, and numerous additions have been made. The author's minuteness of detail, his brief sensible descriptions, the clever arrangement of his text, and, above all, his sane instructions under the headings "What to do" and "What to avoid" give to the student a broad view of this field, and to the practitioner a safe working basis in the absence of the specialist.

PROBLEMAS ACTUALES DE LA DOCTRINA DE LAS SECRECIONES INTERNAS Por el Dr. G. Marañón. Paper Price 18 pesetas Pp 265 with 40 illustrations. Madrid Ruiz Hermanos 1922.

Previous publications of this facile Spanish author have dealt largely with the clinical aspects of the ductless glands. The larger part (170 pages) of the present volume is devoted to a review of the physiology of the endocrines. Two chapters are given to the glandular pathology, and one chapter to organotherapy. Those who can read Spanish will find this book on the ductless glands well worth attention, as in the presentation and critical analysis of facts and theories in this field Dr. Marañón shows himself the equal of the best authors in English, German and French.

DOSIERUNGSTABELLE FÜR DIE RÖNTGEN THERAPIE Allgemein gefasste und nach den Spezialfachern geordnete Bestrahlungs-Rezepte für die zugänglichen Krankheiten mit Berücksichtigung der neueren Forschungen den Bedürfnissen der Praxis entsprechend gestaltet und mit Erläuterungen versehen. Von Dr. G. Holzknecht Professor für Medizinische Radiologie an der Universität. Paper Price 3 marks Pp 33. Leipzig Franz Deuticke 1922.

The author, one of the pioneers in roentgenology, issued this little book as a guide to enable the beginner to determine the roentgen-ray dosage suited to the treatment of a given case. The basis for a scientific and exact selection of the dose is furnished by the recognition of the paramount importance of the dispersion rays and by the introduction into the roentgenologic practice of the measuring of the wave length. In order to simplify the choice of the dose, the author classifies all conditions to be treated in four groups. The first requiring extreme doses, is represented by carcinoma; the second is the group that needs strong but not extreme irradiation; the third group requires only a medium strong dose, and the fourth group requires only weak irradiation. The necessary measuring for the construction of the various intensities was performed with the help of the intensimeter, the radiometer and the spectrograph. All the diseases are catalogued according to the medical speciality in which preferably they are to be treated.

SEMIOLOGIA DOS SOPROS DIASTOLICOS DA BASE Especial F. tudo da Insuficiencia Aortica Miocárdica. Por el Dr. João Barboza Assistente de Clinica Medica da Faculdade de Medicina do Rio de Janeiro. Paper Pp 97 with 3 illustrations. Rio de Janeiro Typ. da Revista dos Tribunales 1921.

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cardiac murmurs, Dr Barboza considers Gallavardin's the least incomplete, although differing with him in the definition of functional murmurs. A remarkable tribute is paid to MacCallum of Johns Hopkins, as deserving credit for "the best studies on the muscular architecture of the heart." There is little original work in the study, but the author has read critically previous contributions and interpreted them according to his own views.

NURSING IN DISEASES OF THE EYE EAR NOSE AND THROAT By Harmon Smith M.D. Surgeon in Throat Department of the Manhattan Eye, Ear and Throat Hospital (Editor) John R. Shannon M.D. Wendell Phillips M.D. John E. Mackenty, M.D. Assisted by David H. Webster M.D., John R. Page M.D. and Francis W. White M.D. With Chapters by Herbert B. Wilcox M.D. and Helena M. Toothaker R.N. Third edition. Cloth. Price \$2.25 net. Pp. 333, with 73 illustrations. Philadelphia: W. B. Saunders Company 1922.

This compact little book contains a wealth of information, not only along the lines of nursing but also along those of the operative and nonoperative treatment of diseases of the eye, ear, nose and throat. The first section deals with the germ theory of diseases, antiseptics, disinfection of rooms and clothing, preparation of surgical dressings, and operating room technic. The nurse's duties in operations and emergencies, as well as the feeding and care of infants, are well covered. The second section is devoted to the eye. The anatomy, the physiology and the common remedies used in ocular conditions are considered quite completely. Then follows a discussion of contagious eye diseases as well as some of the operative procedures. In the third section, covering the ear, we have at first an outline of the physiology, together with the examination of the ears. Functional tests for hearing and the testing of the static labyrinth are given, especially the former. The ordinary tuning fork tests are well described. Then follow diseases of the external, middle and internal ear. In the fourth section, the anatomy of the nose is considered. The fifth and last section covers the pharynx and larynx, their anatomy, and the diseases peculiar to these structures, particularly with reference to the larynx. Many details are given, including examination, edema of the larynx, benign and malignant tumors, tuberculosis, syphilis, foreign bodies, tracheotomy, laryngectomy and thyroidectomy. Not only does this volume give innumerable points of information for nurses, but it would be a valuable book for the general practitioner, he would be spared the necessity of consulting large works by the information here given on many points of general interest to guide him in his treatment of the ordinary affections of the eye, ear, nose and throat with which he often comes in contact.

LICÇÕES DE CLÍNICA MÉDICA Pelo Dr. H. Annes Dias. Prof. da Faculdade de Medicina de Porto Alegre. Paper. Pp. 418 with illustrations. Porto Alegre: Livraria do Globo 1922.

At the request of his pupils, the author, a professor in the Porto Alegre, Brazil, Medical School has compiled some of the lectures on clinical medicine given by him during the last two years. Dr. Annes Dias follows the accepted methods in the analysis of cases. A number of illustrations are attached but they add little to the value of the book, as most of them are not original, and the reproduction is poor. The appended index deserves commendation as setting a good example which other Latin authors and publishing houses might well follow.

THE TOPOGRAPHICAL ANATOMY OF THE THORAX AND ABDOMEN OF THE HORSE By O. Charnock Bradley, M.D. D.Sc. M.R.C.V.S. Lecturer on Comparative Anatomy, University of Edinburgh. Cloth. Price \$5 net. Pp. 204 with 85 illustrations. New York: William Wood & Co. 1922.

This book is a successor of "The Topographical Anatomy of the Limbs of the Horse" by the same author. It is at once a regional, descriptive textbook, and a laboratory manual for use in dissection. It is excellently planned, and gives a clear and instructive account of each of the structures in each region. It is illustrated by reproductions of comprehensive drawings by Mr. James T. Murray, which constitute a valuable part of the work. Dr. Bradley has appreciated the fact that the B. N. A. terminology is better than any other for use, even in a book on the anatomy of a quadruped, and he

has therefore adopted it, adding in footnotes an explanation of etymologies—a feature always appreciated greatly by students. In a few instances, B. N. A. terms are modified slightly to adapt them to the anatomy of the horse. For example, "cranial" and "caudal" are substituted for "superior" and "inferior," and "internal thoracic" for "internal mammary." In cases in which the structure of the horse differs materially from that of other mammals, there is a consideration of the primitive mammalian structure, and of the significance of the specialization as illustrated in this animal. To supply a systematic survey of the great functional systems, the need of which is always felt by students, tabulations are introduced in the back as appendices, covering the arterial and lymphatic systems. The addition of similar tabulations covering the bony, muscular, venous, nervous and other systems would add greatly to the value of the book to the student. The work of the publisher has been admirably done. The illustrations are clear, and the book is convenient, durable and attractive.

DISEASES OF THE THYROID GLAND By Arthur E. Hertzler M.D. F.A.C.S. Professor of Surgery in the University of Kansas School of Medicine. With a chapter on Hospital Management of Goiter Patients by Victor E. Chesky A.B. M.D. Associate Surgeon to Halstead Hospital. Cloth. Price \$5. Pp. 245, with 106 illustrations. St. Louis: C. V. Mosby Company 1922.

This monograph in a brief way considers the entire subject of diseases of the thyroid from etiology to treatment. The first chapter, on etiology and pathogenesis, while brief from the standpoint of the mass of literature on the subject, is nevertheless an intelligent summary. In the chapter on pathology there is a goodly collection of photographs of gross specimens and of photomicrographs. The histopathology is adequately presented, the surgical pathology is not. This is particularly true of the data on exophthalmic goiter. Associated parenchymatous changes, and such subjects as the thymus and the suprarenals are too briefly considered. There is an excellent chapter on aberrant and intrathoracic goiter. There is an excellent series of drawings illustrating anatomy and surgical technic. The book is essentially a personal work, and is interesting reading.

PROFÉDEUTIQUE ET TECHNIQUE UROLOGIQUES Par G. Wiener, Ancien urologue adjoint à l'Hôpital Saint Pierre de Bruxelles. Paper. Price 40 francs. Pp. 483, with 153 illustrations. Paris: Masson et Cie 1922.

There is little in this publication that does not appear in any of the current textbooks, while many important facts are missing. The author tries to show the difference in the quality of the urine, studied by the three glass test, in uncolored pictures. In describing the abdominal puncture of an overdistended bladder, he neglects to mention the dangers of this procedure and how to evade them, especially the possibility of injuring intestinal loops. The recommendation, in urologic operation, of the use of chloroform in preference to ether will not be popular with American surgeons. While much space is devoted to the Ambard constant, discarded as valueless by many clinicians, the modern physiologic renal tests are hardly mentioned.

EXPERIMENTAL PHYSIOLOGY By Sir Edward Sharpey Schafer F.R.S. Professor of Physiology in Edinburgh. Third edition. Cloth. Price \$2 net. Pp. 131 with 90 illustrations. New York: Longmans Green & Co. 1921.

This book contains directions for performing some of the fundamental experiments in physiology, especially experiments on muscle and nerve and the heart (frog). The experiments outlined on mammals are fewer than are usually given in the physiology courses in the better medical schools in this country, but the book should prove interesting and helpful to instructors in physiology everywhere.

BODY MECHANICS AND HEALTH By Leah C. Thomas and Joel E. Goldthwait M.D. Cloth. Price \$1.50. Pp. 112 with 31 illustrations. Boston: Houghton Mifflin Company 1922.

The authors consider briefly the problems of securing and maintaining correct posture while standing, sitting and walking. The book contains numerous illustrations and tables of progressive exercises for use in achieving the objects sought.

Medicolegal

Determination of Necessity for Operation by Results

(*Union Iron Works et al v Industrial Accident Commission et al*
(Calif.) 210 Pac R 410)

The Supreme Court of California says that in 1916 an employee fell from a ladder, breaking both legs and an arm. The corporations that may be called his employers placed him under the care of two physicians, but later removed him to their own private hospital, where he was treated by their own physicians. For four years after the injury, there was a continuous discharge of pus from one leg, due to necrosis of the bone and unhealed wounds. In February, 1920, he consulted one of the physicians who first treated him, who advised an immediate operation to remove the diseased bone. This advice was reported to his employers' physicians, but it was their opinion that such an operation would not be opportune until the clearing up of a discharging sinus in the left leg, and in this conclusion they were confirmed by an opinion to the same effect of another physician and that of the medical director of the industrial accident commission. The employers, therefore, refused to permit operation. After waiting nine months for their physicians to relieve his condition, the employee, in November 1920, abandoning their treatment placed himself under the care of the physician whom he had previously consulted. That physician performed two operations, which were a complete success, the flow of pus being stopped, the broken bones united and the wounds healed. Thereafter, the employee applied to the industrial accident commission for an award of \$1,446.90, for the payment of expenses incurred by him in having these operations performed and for hospital fees and treatment attendant on the operations, which was granted, and is affirmed by the court.

It may be conceded that had this been an action for malpractice or one founded on the old common-law liability of the employer, the time to determine whether a surgical operation was reasonably required would have been before the operation, and that if at that time there was a difference of opinion among competent physicians as to the necessity of an operation, no liability could be predicated on a failure to operate. The proceeding before the commission, however, was not an action for damages, nor was it based on the idea of fault on the part of the employer. It was founded on the provisions of the workmen's compensation act which contemplates and calls for such medical and surgical services as will tend to secure the return of the workman to productive employment. Manifestly, if the treatment practiced and persisted in by physicians furnished by the employer, even though they are conceded to be skilled and competent in their profession, does not within a reasonable time effect a cure, and thereafter a course of treatment prescribed by other physicians procured by the injured employee does in fact seasonably effect a cure then it cannot be said that the employer has furnished such medical and surgical treatment as was reasonably and seasonably required. The successful result of the operations in the instant case demonstrated that such was the treatment reasonably required to cure and relieve the injured employee from the effects of his injury. This being so, the refusal, after more than three years of unsuccessful treatment, of the employers' physicians to operate, despite repeated requests to do so, this refusal extending over a period of nine months during which time the injured employee continued to suffer and his condition apparently grew worse was tantamount to a refusal to furnish the treatment seasonably required by the statute.

But before the injured employee will be entitled to compensation in such a case for expenses incurred in the treatment of him by a physician of his own selection it will have to be shown that the treatment not only was a success but that it was reasonably and seasonably necessary to cure and relieve him. Moreover all the circumstances attending the treatment by the employers' physicians will have to be weighed by the commission in order to determine whether or

not the treatment prescribed by the employers' physicians would, if it had been persisted in, have produced as speedy and as satisfactory a cure as did the treatment of the physician resorted to by the injured employee. In coming to a conclusion, the commission would necessarily take into consideration the period of time covered by the treatment of the employers' physicians and the results obtained during that time. In other words, the injured employee will be permitted, at the peril of having himself to pay the expenses of medical treatment, to secure the services of physicians other than those provided by his employer, this peril attaching unless it can be shown that the procurement of such services was warranted.

Malicious Prosecution of Insanity Proceeding

(*Pickles Anton (N D)* 189 N W R 684)

The Supreme Court of North Dakota, in affirming a judgment for \$6,000 damages in favor of the plaintiff, and in thereafter denying a petition for a rehearing filed by the defendant, says that it is entirely satisfied that an action will lie for the malicious prosecution, without probable cause, of a proceeding the object of which is to have a person adjudged insane. It has been held that the prosecution of such a proceeding without probable cause constitutes cruel and inhuman treatment within the contemplation of the laws relating to divorce, so as to afford a ground for a divorce. It would seem that if the baseless prosecution of an insanity proceeding is a wrong of sufficient magnitude to justify the severing of the marriage ties, it ought to furnish a ground for the award of damages, and in this court's opinion it constitutes a legal wrong for which the party injured is entitled to be compensated. As the name implies, malice is an essential ingredient of an action for malicious prosecution, but it must also be shown that the action or proceeding complained of was instituted without probable cause. The plaintiff may introduce evidence tending to show that the defendant by the institution of the action or proceeding complained of, sought to accomplish some personal or private end. Malice need not be shown by direct and positive testimony. It may be inferred from circumstances. Reasonable or probable cause depends on the honest and reasonable belief of the party commencing the prosecution that the charge made is true. The fact that the plaintiff may have committed certain unlawful acts would not justify the defendant in charging that she was insane and in attempting to have her incarcerated in an asylum for the insane. In other words, it would not furnish probable cause for the inquisition for lunacy.

Liability for Injury Extended to Death from Second Operation

(*Blackwell v American Film Co Inc et al (Calif)* 209 Pac R 999)

The Supreme Court of California says that owing to the alleged negligence of the defendants the plaintiff's husband suffered a fracture of one of his legs above the knee and no union of the bone could be effected. A little more than six months after the accident, an operation was performed which was unsuccessful. Mr. Blackwell sued the defendants for damages and recovered a judgment for \$13,762. About seven months after the first operation a second operation was performed to effect a bone transplantation and a short time after the operation the patient died. The judgment was paid to Mrs. Blackwell as administratrix of her husband's estate. Thereafter she, as administratrix, brought this action to recover damages for the death of her husband and recovered a judgment against the film company for \$10,000 which is affirmed.

The fact that the decedent recovered damages for his injuries would not, in itself, prevent a recovery in this case. The only question presented in this connection was whether it could be said that there was no evidence from which the jury might conclude that the accident was the proximate cause of Mr. Blackwell's death. According to the record he was under the care of the defendants and received special attention from the defendants. The evidence also indicated

step in the continuous treatment administered in an endeavor to cure him of the effect of his injuries. The jury might have found from the evidence that the operation was a proper one under the circumstances, in fact, there were no indications to the contrary. In such a case, the treatment by a physician cannot be held to be a new or intervening cause which would relieve the defendant from liability for the original injury.

The defendant film company emphasized the fact that the decedent in this action alleged that his injuries were permanent, and recovered damages on that basis. Such an allegation was immaterial in the case at bar. The measure of damages in the suit brought by him was based on his duty to use reasonable efforts to restore his health and earning capacity. The question in this case was what pecuniary loss was suffered by the plaintiff and her children by reason of the loss of the decedent in his crippled condition. This defendant also specified as error the overruling of its objection interposed to testimony by Mrs. Blackwell that the physician told her husband to go to the hospital to have the second operation. This ruling was correct. Mr. Blackwell had placed himself under the care of a physician, and it was proper to show that, in receiving treatment, he was following instructions given by the physician. In proving this fact, it was competent to admit testimony that certain orders were given. The testimony was not admitted to prove the existence of any fact related by the physician, but to prove that he made the statement in question. The admission of the testimony under such circumstances was not obnoxious to the hearsay rule.

It was insisted further that an instruction given the jury to the effect that, if the decedent used ordinary care in the selection of a physician, and submitted to the treatment prescribed by him, it would be no defense to show that the physician failed to give him the best or proper treatment conflicted with one to the effect that an error of treatment would not relieve the defendant, but, if the physician made use of the opportunity to perform an unnecessary and dangerous experiment on the decedent, and the experiment alone resulted fatally to the decedent, the defendant would not be liable. But these instructions were not in conflict. The former properly told the jury that mere concurring negligence on the part of the physician would not be a bar to a recovery by the plaintiff in this case. The latter told the jury that, if the physician stepped out of the proper field of treatment to perform an unnecessary and dangerous operation, as an experiment for his own benefit, it would constitute an independent, intervening act of the physician, for which the defendant would not be liable.

Physician's Report for Accident Industrial Board

(*Emma s Case (Mass.) 136 N. E. R. 125*)

The Supreme Judicial Court of Massachusetts says that an employee having suffered an injury to his left eye and certain compensation having been awarded therefor, the insurer sought a review and requested permission to introduce further evidence, which consisted of a supplemental report made on a re-examination by a duly qualified impartial physician appointed by the industrial accident board. By Section 9 of the workmen's compensation act, the report of such a physician shall be admissible as evidence in any proceeding, provided the employee and the insurer have been furnished with copies in good season. It is not conclusive. But by the statute, the report is put on the footing of evidence, if copies have been given to the parties in good season. It is not to be assumed that the legislature intended that the board or a single member should give any probative weight whatever to such a report unless it is used as evidence. It was discretionary with the board whether a report should be requested. But having been asked for and furnished and copies duly transmitted, the admissibility of the report did not depend on formal offer of proof. It was before the board for consideration in connection with all the evidence, and the provision of Section 10 that the admission of further evidence was discretionary had no application. It was competent for either party to offer evidence to rebut or control the clinical statements and conclusions of the report, or to impeach the credibility, impartiality and qualifications of the

certifying physician. But a failure to exercise such rights, or the enforcement of them could not affect the duty of the board to consider the report as evidence for whatever in their judgment it might be worth. Here the board denied the insurer's motion for permission to introduce the further evidence stated, and it is held that, as it was plain that the award was made on a part only of the material and competent evidence the case must be remanded for further proceedings not inconsistent with this opinion.

Death of Child Falling from Bed in Hospital After an Operation

(*Maxie et al v Laurel General Hospital (Miss.) 93 So. R. 817*)

The Supreme Court of Mississippi, Division A, says that this action was brought to recover damages for the death of a child, 8 years of age, who had an attack of appendicitis, and was taken to the defendant hospital for care and an operation, was operated on, and shortly thereafter, when there was no attendant in the ward in which she was placed, fell off the bed and soon afterward died. At the conclusion of the evidence, the trial court, on motion of the defendant, directed the jury to return a verdict in favor of the latter, which was done, but the judgment entered accordingly is reversed on the ground that the liability of the defendant was a question for the jury. The supreme court holds that the business of a hospital for the sick and afflicted, conducted for private gain, carries with it an implied obligation to give the patients therein reasonable care and attention, and such a hospital, so conducted, is liable for an injury received by a patient therein resulting from the negligence of its employees. When a child, 8 years of age, in such a hospital shortly after being operated on for appendicitis, was left by the employees of the hospital in a ward without an attendant or any means of calling assistance and while so situated for some reason fell from its bed, and its temperature soon thereafter rose rapidly, and in a few hours it died, the question of liability for such injury and death was one for the jury and not the court. Therefore, the court erred in directing a verdict for the hospital.

Society Proceedings

COMING MEETINGS

Alabama Medical Association of the State of Mobile April 17 20
Dr H G Perry State Board of Health Montgomery Secretary
American Association of Anatomists Chicago March 28 30 Dr Lewis
H Weed Johns Hopkins Medical School Baltimore Secretary
American Association of Pathologists and Bacteriologists Boston March
29 30 Dr H T Karsner Lakeside Hospital Cleveland Secretary
American Association of Physicians Atlantic City May 13 Dr
Thomas McCrae 1929 Spruce Street Philadelphia Secretary
American Laryngological Rhinological and Otolological Society Atlantic
City May 10 12 Dr W H Haskin 40 E 41st St New York Secy
American Society for Clinical Investigation Atlantic City April 30
Dr James H Means 15 Chestnut Street Boston Secretary
Georgia Medical Association of Savannah May 24 Dr Allen H
Bunce Healey Building Atlanta Secretary
Iowa State Medical Society Ottumwa May 9 11 Dr T B Throck-
morton Bankers Trust Building Des Moines Secretary
Kansas Medical Society Kansas City May 24 Dr J F Hassig 800
Minnesota Avenue Kansas City Secretary
Louisiana State Medical Society New Orleans April 10 12 Dr P T
Talbot 1551 Canal Street New Orleans Secretary
Maryland Medical and Chirurgical Faculty of Baltimore April 24 26
Dr J A Chatard 1211 Cathedral Street Baltimore
Mississippi State Medical Association Vicksburg May 8 9 Dr T M
Dye Clarksdale Secretary
Missouri State Medical Association Joplin May 9 11 Dr E J Good-
win 3529 Pine Street St Louis Secretary
North Carolina Medical Society of the State of Asheville April 17 19
Dr L B McBrayer Sanatorium Secretary
Ohio State Medical Association Dayton May 13 Mr D K Martin,
131 East State Street Columbus Secretary
South Carolina Medical Association Charleston April 17 19 Dr
Edgar A Hines Seneca Secretary
Tennessee State Medical Association Nashville, April 10 12 Dr Larkin
Smith 154 Eighth Avenue N Nashville
Texas State Medical Association of Fort Worth May 8 10 Dr Holman
Taylor 207 1/2 W 11th Street Fort Worth Secretary
Western Electro-Therapeutic Association Kansas City Mo April 19 20
Dr Charles Wood Fassett 115 E 31st Street Kansas City Secretary

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below

American Journal of Diseases of Children, Chicago

February 1923 25 No 2

- Influence of Growth on Basal Metabolism of Children G B Fleming Glasgow Scotland—p 85
- *Neuropsychiatric Sequelae of Acute Epidemic Encephalitis in Children F G Ebaugh Philadelphia—p 89
- *Acute Hemorrhagic Encephalitis Report of Case Following Scarlet Fever J A Toomey L H Dembo and G McConnell Cleveland—p 98
- *Intraperitoneal Transfusion with Citrated Blood D M Siperstein Minneapolis and J M Sansby St Paul—p 107
- Congenital Malaria Report of Case in Colorado R P Forbes Denver—p 130
- *Excretion of Foreign Protein in Human Milk H C Stuart Boston—p 135
- *Oxygen Therapy in Premature Babies with Anoxemia H Bakwin New York—p 157
- *Toxemia of Severe Superficial Burns in Children B Robertson G Boyd Toronto Canada—p 163
- Review of Literature on Blood and Blood Diseases of Infants and Children for Last Four Years (1918-1921) L W Hill Boston—p 168

Influence of Growth on Basal Metabolism of Children—Evidence is presented by Fleming in favor of the suggestion that the high basal metabolism of the growing child may to some extent be accounted for by the amount of energy expended in the manufacture of new tissue

Neuropsychiatric Sequelae of Acute Epidemic Encephalitis in Children—In seventeen cases of postencephalitis disturbances of a neuropsychiatric type, analyzed by Ebaugh, the psychiatric sequelae consisted of (1) total change in character and disposition with characteristic hyperkinetic states, leading to behavior oddities consisting of emotional lability, sexual precocity, general incorrigibility, etc., (2) insomnia with nocturnal agitation, (3) affective disorder of a depressive type, (4) hysterical reactions, (5) tics, fears, and (6) mental deficiency. Neurologic sequelae consisted of headaches, dizziness, diplopia, drowsiness, asthenia and oversatiation. Disturbances in motility, especially choreiform movements, were present. These disturbances appear to be related to the mental state. Visual disturbance and facial weakness also occurred as residuals. Evidence of endocrine change was noted in one case. Ebaugh suggests that the prognosis should be guarded, but pessimism should be avoided. Fifty per cent of these patients are well or improving. There is no specific treatment for these conditions. Children should be sent to psychopathic wards for observation. Spinal drainage was effectual in several cases. These children do not react to discipline.

Acute Hemorrhagic Encephalitis Following Scarlet Fever—The hemorrhages found in the brain, and the character of the onset and symptoms of the case reported by Toomey et al conform to the description of the Strumpell-Leichtenstern type. The brain symptoms appeared just three weeks after the onset of the scarlet fever.

Intraperitoneal Transfusion with Citrated Blood—The intraperitoneal route for blood transfusions is proposed by Siperstein and Sansby as a therapeutic method of merit, one which will overcome many of the objections to other routes of conveying blood to a child. The intraperitoneal transfusion of freshly citrated blood acts as a true transfusion and not as the absorption of a nutrient material. The work on which the method is based was done on rabbits.

Case of Congenital Malaria—The case reported by Forbes owes its chief interest to the fact that the anopheles mosquito can be excluded as the source of infection, and that intra-uterine infection therefore, does occur. The child was 7 weeks old when the first attack occurred. The patient had six febrile attacks at seventy-two hour intervals, before the periodicity was fully appreciated. The mother gave a history of an unusually severe quartan infection in Greece seven years before, but asserted that she became free from all symptoms three months after coming to the United States.

in 1916. Quinin hydrochlorid 2 grains every four hours, was begun and continued for four days, then it was given three times daily for four days, then three times on each of two days of each week for two months. Twenty days after quinin therapy was begun the spleen could not be palpated. The baby had gained 26 ounces in fourteen days. At 6 months, the baby weighed 16 pounds, and had been free from any symptoms of malaria since treatment was begun.

Excretion of Foreign Protein in Human Milk—Stuart cites experiments which he believes warrant the conclusion that egg-white protein is not demonstrable in the breast milk of mothers by any of the methods at present at our command. He does not suggest that such protein may not be present in infinitely small amounts, but knowing what small traces of egg-white will sensitize guinea-pigs he feels that the conclusion is warranted that infants must be extremely sensitive to be affected by the amounts which they receive from this source. The explanation therefore of the frequent finding of these positive reactions in exclusively breast fed infants has not as yet been given and the problem calls for further investigation. Stuart's results however, fail to suggest that breast milk is a medium for the transmission of antigen.

Oxygen Therapy in Premature Babies with Anoxemia—Two prematurely born babies with marked anoxemia as indicated by the cyanosis and the increase in the oxygen unsaturation of the venous blood, were treated with oxygen inhalations. In both instances the cyanosis disappeared and the saturation of the venous blood rose to normal. The oxygen was given through a rubber tube inserted into the mouth.

Treatment of Toxemia of Burns in Children by Exsanguination-Transfusion—In casting about for some means of relieving the toxemia incident to burns, the operation of 'exsanguination-transfusion' was devised by Robertson and Boyd. The operation consists in the initial withdrawal of blood from the patient's longitudinal sinus or femoral vein until the limit of safety is reached. The transfusion is then commenced in an elbow vein. Withdrawal of the patient's blood and injection of fresh blood are then carried on simultaneously until the amount withdrawn is slightly less than the amount available for transfusion. The withdrawal is then discontinued and the remainder of available blood injected. The amount of blood withdrawn has ranged from 200 cc in an infant, up to 500 cc in a child 3 years of age. The results have been very encouraging. In ten cases of burns of the type described (1 c, with convulsions), two children received blood transfusion and eight were subjected to exsanguination transfusion. Three of the latter died from burn toxemia. In the other seven cases, the burn toxemia was relieved.

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Effects of Acute and Chronic Pneumothorax—On the basis of personal clinical experience, Yates regards an acute pneumothorax as being dangerous in so far as it interferes with the pulmonary circulation. The extent of the danger is determined by the integrity of the circulation, chiefly by the latent energy of the myocardium. Since reserve myocardial energy cannot be estimated accurately and is quite essential to life during a period of stress, open thoracotomy should be performed with some form of differential pressure. Thus alone may the degree of pulmonary deflation required for the intrathoracic operation be permitted to develop gradually, be controlled so as not to become excessive and allowed to be as transient as possible. The operation is incomplete until full pulmonary inflation is both obtained and maintained. The latter is possible only when suitable one way primary drainage is used. Gas-oxygen positive pressure analgesia as developed by Gwathmey is simple, safe and satisfactory, and, in the absence of a negative pressure cabinet is the best method now available. Chronic pneumothorax, as well as chronic pulmonary compression by the pleuritic effusions inevitable after thoracotomy, must be avoided if surgeons would assure to patients the best chances for rapid, comfortable and complete recovery. Experiment data are given.

Aneurysm of Hepatic Artery—Friedenwald and Tannenbaum add one case to the sixty-five recorded in the literature. On account of the age of the patient, his loss of flesh, absence of pain, jaundice, blood in the stools, diminution in pancreatic ferments, and the roentgen-ray findings, the diagnosis was made of carcinoma of the pancreas, though the possibility of a stone lodged in the ampulla could not be ruled out entirely. While on the commode, but before his bowels had moved, the patient had a sudden fainting attack. He lost consciousness and his pulse became imperceptible. This was associated with a very severe pain in the right hypochondrium just to the right of the epigastrium. Half an hour after the collapse the patient had a profuse bowel movement, but there were no evidence of blood clots or hemorrhage. Following this there was a second partial collapse, which was again relieved by the administration of camphorated oil. The attacks remained unexplained, except the possibility of an internal hemorrhage. Two days later he suddenly uttered a cry, became pulseless and died. The diagnosis of hemorrhage was made, the cause of which was not ascertained until the necropsy disclosed an aneurysm of the hepatic artery which had perforated. The symptoms most frequently observed in aneurysm of the hepatic artery are pain, hemorrhage, icterus, enlargement of the liver fever, fluctuating tumor in the region of the gallbladder, marked anemia, emaciation, together with attacks of syncope, dizziness, headaches, weakness and indigestion. All of these symptoms are rarely present in any individual case and ordinarily there are but few symptoms. In many instances the patient dies after a single attack of pain followed by hemorrhage without having had any previous symptoms whatever. Ligation of the hepatic artery is the only rational methods of treatment.

Fibrillation of Auricle Returned to Normal Rhythm—Four cases are cited by Bishop which illustrate the return to normal rhythm in hearts which have been the seat of fibrillation of the auricle but were later normal in their auricular function. One example is that of a man with extremely advanced circulatory disease, which is shown by an enormous enlargement of the heart, the maintenance of a terrific blood pressure the recurrence at various times of all the cardiac symptoms of heart failure, namely, dyspnea, edema, congestion of the lungs, liver and kidneys, and occasionally fibrillation of the auricle. This man, nevertheless, now presents a fair appearance of health and a regular heart as the result of being put on a strict regimen. The only specific treatment he has been given for his fibrillation is digitalis. His normal rhythm is, therefore a part of the natural history of the ups and downs of the auricle. Another illustration of auricular fibrillation of an entirely different character is that of a man

who developed cardiac disease as a result of long standing, continued nervous strain and overwork. He had symptoms of angina pectoris. At the time of his examination he had auricular fibrillation. His heart is now regular as a result of a strict regimen.

Heart Block and Auricular Fibrillation—The chief pathologic changes found in the heart in this case, which Neuhof believes were undoubtedly the final cause of the cardiac disturbance, were found in the coronaries, in the artery of the auriculoventricular node (the node of Tawara) and in the musculature surrounding the node. The coronary artery was thickened and sclerosed, although still patulous. The artery supplying the auriculoventricular node (the beginning of the auriculoventricular conduction system, the normal conveyor of impulses from auricle to ventricle) was completely calcified. Surrounding the artery (and probably as the result of its calcification) was a distinct zone of degenerated musculature, which undoubtedly included the node, either in whole or in part. Neuhof is convinced that the calcifying process in the coronary artery, and particularly in the artery of the node, had been going on for many years, yet the patient at the time of death was 80 years old and had lived in cardiac comfort until sudden heart failure supervened, in all probability this resulted from final complete closure of the calcified artery supplying that node. This case is another illustration of the fact that the slow process of intracardiac arterial disease may never at any time sharply interfere with the factor of safety of the heart, and that ample time had probably been given for the establishment of coronary anastomosis, for, contrary to older teachings, it is now known that the coronaries are not end arteries and that many deeply situated anastomoses exist.

Arsenical Treatment of Chronic Infectious Endocarditis—During the past twelve years Capps has treated all of his cases of chronic infectious endocarditis with daily injections of sodium cacodylate (usually intravenously), continued over a period varying from seven weeks to four months. In many of these patients he failed to find bacteria in blood cultures, although the other clinical findings were sufficiently characteristic for making the diagnosis. Eight cases were proved by blood cultures. Two of these patients died, and six survive. The duration of the disease in the fatal cases was six and thirteen months, respectively. The observation of the six surviving cases extends over periods of from eleven years and six months, to three months. Four patients have remained in good health for two years and more may be reasonably classified as recoveries. The only specific therapy attempted was the prolonged use of sodium cacodylate in daily doses of from 1 to 4 grains. The drug was pushed until a strong garlic odor was expelled with the breath. Capps feels that the preparations sold on the market in ampoule form are not very dependable, so that it is advisable to make a fresh preparation every few days of a reliable drug. No untoward effects were observed in any case. If the bowels became loose the dose was decreased for two or three days. Rest in bed was insisted on during the period of treatment. The results of blood cultures were of especial interest. *Streptococcus viridans* was the organism found in all cases. All the healed cases showed disappearance of bacteria from the blood during recovery.

Fate of Arsenic After Intrathecal and Intravenous Injection—Rudolf and Bulmer assert that when arsenic is injected intravenously little, if any, of it reaches the central nerve tissues. When it is given in therapeutic doses intrathecally none of it can be detected in the spinal cord.

Influence of Ohguria on Nitrogen Retention in Blood—The influence which marked reduction in the quantity of urine may have on the excretion of nitrogen, and so indirectly on the level of nitrogen in the blood does not, in Peppers opinion seem to receive adequate recognition. The principle is well known, but it has not been sufficiently applied, and certain points which it seems to make clear have, therefore, been left in confusion and uncertainty. In nephritis, for example there is often a decrease in urinary output a failure to excrete sodium chlorid and a moderate rise in the level of the various fractions of the noncoagulable protein of the blood. In such cases it is frequently assumed that there is

impairment of the urea-excreting function of the kidney, as well as interference with the elimination of water and salt. Some even dignify these cases with the name "mixed nephritis." When the evidence is examined, however, one cannot help being impressed by the fact that the nitrogen retention may in some instances be the result solely, or in large part, of interference with water elimination, and that the urea excreting function of the kidney may be entirely unimpaired. If this view is accepted a number of apparently contradictory observations become harmonized. In the treatment of nephritis an appreciation of these principles is important, for they supply a basis for understanding what can be expected of the kidneys in a given condition. They emphasize the importance of maintaining polyuria when the concentration ability is diminished and of decreasing, if possible, the urea production to an amount which the concentration maximum and the amount of urine, indicate that the patient can dispose of. Little or nothing can be done therapeutically toward raising the concentration ability of the kidneys but, by avoiding passive congestion and body dehydration, it is possible to make sure that the kidneys shall have every opportunity to excrete water, and by reducing the protein of the diet and by avoiding tissue destruction as far as possible the demands placed on the nitrogen-excreting function of the kidney can be lowered and so one factor is avoided which undoubtedly favors nitrogen retention in the body.

Persistent Leukocytosis in Thrombo-Angitis Obliterans.—The case described by Thomas is believed to be one of thrombo-angitis of the arteries and veins supplying both lower extremities. The patient is a full blooded Jew, born in the United States, his parents were citizens of Austria-Hungary. He has smoked cigarets to excess for many years. After a sudden attack, in 1918, of auricular fibrillation (which subsided) he was well until April, 1921, when he first became troubled with severe pains in the lower extremities on walking. It was then found that he had a white blood count of 22,000. The pain in the legs and numbness of the left foot increased during the next seven months and the leukocytosis persisted. The rather widespread distribution of the vascular disorder with a comparatively low grade of cyanosis without rapid blanching on change of position of the leg clouded the exact diagnosis. There was evident obstruction to the arterial flow in the vessels of both lower extremities. Whether this is or is not due to true thrombo-angitis obliterans, the subsequent course of the disease alone can decide. The existence of a well marked and persistent leukocytosis is emphasized. It would seem probable that a leukocytosis may be found to occur frequently in the early stages of thrombo-angitis obliterans, if this is verified the fact would lend weight to Buerger's contention that the process is infectious in nature.

Injury of Spinal Cord Cause of Fetal Death.—Five cases are reported in which crippling depended on injuries to the spinal cord apparently caused by breech extraction. In making the diagnosis, pathologic, clinical and physiologic facts are considered. Four of these cases showed conclusive evidence of practically complete transection. One child showed evidence of an incomplete lesion.

Is the Stomach a Focus of Infection?—The study made by Kopeloff showed that the bacterial content of the stomach is influenced by the saliva, hence it may be inferred that the stomach is not acting as a focus of infection but merely as a receptacle for the bacteria poured into it. This is in agreement with the bacteriologic investigations of others to the effect that gastric acidity is sufficient to prevent bacterial development.

American Journal of Obstetrics and Gynecology, St Louis

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Pathology of Uterine Bleeding in 100 Analyzed Cases H Grad, New
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*Bacteriology of Fatal Systemic Infections Following Miscarriage or
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*Repeated Dystocia from Fetal Anomaly in Successive Pregnancies
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Once a Cesarean Section Always a Cesarean Section, An Untruth
J P Greenhill Chicago—p 86

Diagnosis of Malignant Uterine Neoplasm.—In Norris' series of 391 cases of malignant tumors of the uterus the clinical diagnosis was positive and correct in 272 cases (69.3 per cent) the true condition was suspected in an additional fifty-nine cases (15 per cent), in fifteen cases (3.8 per cent) the clinical diagnosis was malignant tumor but the type of neoplasm was not recognized and in forty-five cases (11.5 per cent) the condition was clinically regarded as benign and its true character determined only on histologic examination.

Treatment of Cystocele, Rectocele and Uterine Prolapse.—In the repair of a cystocele the principle involved in the operation done by Frank is based on separation of the descended bladder from the uterine cervix, repair of the pubocervical fascia in the median line, and suture of this structure high up to the cervico-uterine junction so as to reestablish a tense continuous bladder shelf. For repair of a high rectocele, the operation consists in exposure of the anterior rectal wall high up opening of Douglas's cul de sac, obliteration of this pouch by circular suture and repair of the torn rectal fascia. This repair is usually combined with repair of low rectocele and torn perineal body. To repair a low rectocele and lacerated perineum, Frank makes an exposure of the anterior rectal wall separates the rectum laterally from adjacent structures, and approximates the levator edges and triangular ligament en masse.

Blood Sugar During Pregnancy.—The average range for blood sugar concentration in normal pregnant women is stated by Rowley to be from 0.09 to 0.11 per cent, the same as that found in nonpregnant women. The average value found by him in fifty-three observations of the blood sugar concentration during pregnancy was 0.11 per cent. The average value in thirty-two observations of the sugar concentration of fetal blood taken from the umbilical cord immediately after delivery was 0.09 per cent. The average value for twenty-two observations of the blood sugar concentration on the second day postpartum was 0.14 per cent. Placental interchange of glucose in Rowley's opinion, is undoubtedly dependent on the higher concentration of blood sugar in the mother. The influence of muscular exertion during labor is not a factor in postpartum hyperglycemia. Anesthesia with ether is a contributing but not a determining factor in producing a rise in the sugar concentration of the cord blood. Asphyxia produces a more marked rise than anesthesia with ether. Involution of the uterus cannot be shown to be the primary factor in producing postpartum hyperglycemia. The general physiologic change associated with involution may be a factor in producing postpartum hyperglycemia. In certain types of toxemia there is an increase in the blood sugar concentration.

Sugar Test in Pregnancy.—With pregnant women an alimentary administration of even 100 gm of grape sugar leads to glycosuria with blood sugar under 0.19 per cent which means that the spontaneous and artificial glycosuria of pregnancy occurs without an important increase of blood sugar content. Hence this renal glycosuria of early pregnancy may be used to diagnose pregnancy during the first trimester. This artificial renal glycosuria is present constantly in pregnancy only during the first three months when other signs of pregnancy are inconclusive. After the twelfth week of pregnancy it rapidly disappears and can be evoked in the later months only in a definite percentage of cases (about 30 per cent). Nest have used this method of diagnosis of pregnancy in 17 cases. In the first twenty-five cases this test was not used. As was

made In the first series of twenty-seven tests using 100 gm glucose, seven women were at periods ranging from fourteen to twenty-four weeks pregnant As these were all advanced too far in pregnancy to diagnose by the sugar test, they may be ruled out entirely Only one of these seven women gave a positive result, at fourteen weeks, two had excessive hyperglycemia, from 307 to 410 mg per hundred cubic centimeters of blood which was not considered as diagnostic of pregnancy Of the other eighteen, which were under the twelve weeks' period, fifteen agreed with the final diagnosis and three disagreed In this series the urine was examined only at forty-five minutes and one hour In the second series of forty-four cases in which 150 gm of glucose was used, only two cases of those within the twelve weeks of pregnancy disagreed These failed to give a positive sugar test, though they later proved to be pregnant In no case was there a positive glycosuria, where there was no pregnancy, though blood sugar estimations were as high as 2162 mg per hundred cubic centimeters of blood

Blood in Normal Pregnancy—The results of the study of blood made by Krebs and Briggs with special reference to the inorganic constituents shows a great constancy of all the elements in normal pregnancy, regardless of the period of gestation, with one exception, namely, that in the last weeks of pregnancy the calcium content was lowered slightly

Bacteriology of Fatal Systemic Infections Following Abortion—From a study made by Moody of the bacteria found in women dying from sepsis following abortion, it appears that the hemolytic streptococcus is more often found than other organisms, but that such bacteria as *Bacillus coli* and staphylococci are not infrequently present The possibility is suggested that the hemolytic streptococci are present in the lochia but that some outside influence, such as trauma from instrumentation, douches, and the like, is necessary to bring about generalized infection

Repeated Dystocia from Fetal Anomaly—The two cases reported by McDonald concerned the same mother in two pregnancies They present four types of anomaly (1) polydactylism and syndactylism, (2) situs transversus, (3) some anomaly of the urinary tract with hypertrophy of the bladder wall and patent urachus, (4) ascites

American Journal of Tropical Medicine, Baltimore

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- Limit of Usefulness of Fish in Larvae (*Aedes Calopus*) Control W M Monroe New York—p 21
- *Hepatic Lesions of Experimental Yellow Fever T G Perrin Mexico—p 27
- *Transmission of Rocky Mountain Spotted Fever by Rabbit Tick *Haemaphysalis leporispalustris* Packard R R Parker Hamilton Montana—p 39
- Biology of *Leishmania Tropica* A M Pedrosa Sao Paulo Brazil—p 47
- *Presence of Yeast Like Bodies in Blood of Human Beings M S Fleisher and M Wachowiak St Louis—p 59

Hepatic Lesions of Experimental Yellow Fever—In the livers of guinea-pigs which died after injection of virulent cultures of *Leptospira icteroides* Perrin found (apart from intense congestive and hemorrhagic phenomena, fibrous reactions of the stroma and vascular walls etc) two principal types of lesions fatty degeneration or dystrophic steatosis, acute and profuse, and insular necrosis, analogous to that found in human livers from fatal cases of yellow fever The insular necrosis presents characteristics analogous to those observed in experimental infectious jaundice in the guinea-pig

Rocky Mountain Spotted Fever Transmitted by Rabbit Tick—The data involving the rabbit tick, which Parker presents, indicate that in seeking for the factors responsible for the maintenance of Rocky Mountain spotted fever in nature rabbits must be reckoned as one of the possibilities It seems probable that Rocky Mountain spotted fever can be maintained among wild rabbits by means of the rabbit tick without the presence of the wood-tick *Dermacentor venustus* Banks It is furthermore probable that this fever may exist in the rabbit population in localities in which human cases

have not been known and also that it may be far more generally distributed among the rodents in the northwestern states, especially in rabbits, than the known distribution of human cases would indicate

Yeastlike Bodies in Blood of Human Beings—Yeastlike organisms were found by Fleisher and Wachowiak in the blood of three persons suffering with chronic diarrhea These organisms fed to animals produced diarrhea and death, and they could usually be recovered from both the intestinal mucosa and the heart's blood at necropsy, thus confirming their etiologic relationship to the disease in human beings The finding of a yeastlike organism in one case of sprue suggests to the authors that further studies must be made in this disease

Archives of Ophthalmology, New Rochelle, N Y

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- Isolated Paralysis of Inferior Oblique S B Marlow, Syracuse N Y—p 12
- Factors Influencing Choice of Method for Cataract Extraction D Smith Bridgeport Conn—p 25
- Paralysis of Divergence Report of Three Cases Due to Epidemic Encephalitis J H Dunnington, New York—p 39
- Bitemporal Contraction of Visual Fields in Pregnancy C E Finlay, Havana Cuba—p 50
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- Basal Cell Carcinoma of Orbit and Ethmoid Operation, Radium Application J Green Jr St Louis—p 75
- Case of Epibulbar Melanotic Sarcoma Occurring Sixteen Years After an Injury J M Ball and H D Lamb St Louis—p 80

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- Medical Supervision at Antioch College G H Bigelow, New York—p 157
- Young Cardiac Cripple with Especial Reference to ex Soldiers F H McCrudden Boston—p 164
- *Plea for Testing Selected Single Specimens of Urine with Special Regard to Diabetes H Gray, Boston—p 168

Testing Single Specimens of Urine—Albumin, casts and sugar, Gray says, are overlooked frequently when the physician examines a random sample of urine and, furthermore, even in the twenty-four hour amount Hence, the best method alike for early diagnosis, for treatment, and for the doctor's periodic study, is to test every single specimen throughout twenty-four hours Intermittent glycosuria often occurs at unexpected hours Casts also are far more constantly found in fresh single specimens than in twenty-four hours specimens, particularly in diabetic urines When it is impracticable for the physician to study every sample it is desirable to investigate a specimen one hour after a hearty meal

California State Journal of Medicine, San Francisco

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- Uterine Myomas and Their Treatment W H Gilbert Los Angeles—p 5
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- Use of Pupilloscope in Neurology H G Mehrtens and O Barkan San Francisco—p 13
- *Tumors of Breast Arising During Pregnancy and Lactation A R Kilgore San Francisco—p 14
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- Educational Standards in Physiotherapy R L Wilbur Yosemite Valley—p 24
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- Brisement Force and the For and After Treatment A Gottlieb Los Angeles—p 29
- Treatment of Painful Affections Involving Cervical Vertebrae H L Langnecker San Francisco—p 31
- Resection of Distal End of Ulna for Shortening Radius Following Fracture—In cases of fracture of the radius in

which either the shaft of the radius had been shortened by loss of bone or an overlapping of the fragments, or those cases in which the epiphysis had been impacted or comminuted, causing a definite protrusion of the ulna into the wrist joint sufficient to limit ulnar flexion of the hand with or without subluxation of the ulnar head Hoag has resected the distal end of the ulna. Whether a subperiosteal resection is done or the periosteum is also excised seems immaterial except from the standpoint of preserving the radio-ulnar ligaments and avoiding the formation of callus. Reformation of bone which limits motion seldom occurs, providing a full range of motion is maintained from the start to mold the callus. A satisfactory result depends on the observance of this point. Usually no splint or cast is necessary. The use of a sharp chisel, instead of a Gigli saw is urged as being less damaging to the radio-ulnar attachments. The operative technic is simple, it does away with the need for immobilization, there is no possibility of nonunion and less opportunity for infection. Rotation of the forearm and lateral motion of the wrist are more completely restored. The restoration of strength and the cosmic results are generally better. Four cases are cited.

Syphilitic Headache—Out of 200 consecutive cases of syphilis with early cutaneous lesions seen by Sutton, headache was the symptom most complained of in eight instances and was present in varying degree in forty-two cases. The pain may vary from a dull throbbing ache in mild cases to severe flashes, accompanied with fever, giddiness, a slowing of the pulse rate, and even convulsions. Syphilitic cephalalgia is consistently worse at night. As a rule the pains start in the occipital region and spread up over the vertex in lightning-like flashes, but do not follow the course of any certain nerve. Often of vesperal onset, they may even waken the unfortunate patient from deep sleep with the whole body aching "in concert." While occasionally a superficial tenderness over the skull may suggest a periostitis or a dull ache may resemble that of any acute infection, all the headaches of early syphilis, Sutton says, should be regarded as being due to an early meningeal irritation unless definitely proved otherwise. Head pain due to syphilis of the cranial and peripheral nerves was present only twice in Sutton's series of cases. He emphasizes that syphilis should be suspected in all instances in which head pain is a prominent and chronic symptom.

Tumors of Breast Arising During Pregnancy and Lactation—This paper is a report of an interesting study made by Kilgore of the tumors of the breast arising in connection with functional activity of the organ. Of a total of 1 099 cancers forty-nine or 4.45 per cent, arose during breast activity. In lactation and pregnancy, cancer, galactocele, tuberculosis and adenoma comprise more than 90 per cent of the tumors in the order of frequency named. Ninety-three per cent of the cancers arose after 30 while 68 per cent of the benign tumors arose under this age. Twenty per cent of all pregnancy and lactation cancers were first noted during the beginning four months of lactation. The number of cases of cancer per hundred thousand pregnant or lactating women increases markedly after the age group 35 to 39 over the number of cases of cancer per hundred thousand women not pregnant or lactating. Forty-five of the forty-nine patients with breast cancer were traced five years or more after operation and of this number six were well when last heard from, i. e. 13 per cent (unselected) proved to be five-year cures—not as high as the percentage of cures in unselected cases of breast cancer generally, but indicating as cancer statistics go a far from hopeless prognosis for malignant disease arising in connection with breast activity.

Treatment of Constipation—Constipation is either spastic or atonic. Both conditions are the results of long continued irritations and inflammations, therefore curing the irritation or inflammation will also cure the constipation be it either spastic or atonic. As a producer of irritation to the colon Clarke says, the cathartic habit easily takes first rank. Among cathartics salts of all kinds with their ever present osmotic action are probably more injurious than all others. Each dose makes worse the malady it is intended to relieve, and convinces the patient the more strongly that nothing

short of "dynamite" will do any good. The indiscriminate use of bran and other irritating foods is another great cause of constipation. Vaunted by health lectures and magazines advertised by commercial food concerns, and many times by the doctor as well it continues to be, when put into an already inflamed tract, irritating. Although producing bowel movement for a while it only serves to deepen and increase the inflammation which is the basis of the patient's malady. The enema is nearly as bad as the cathartic. It washes away normal secretions and introduces a foreign substance to further irritate the bowel and rectum. The mental attitude is no small factor in the cause of constipation. The patient "thinks" he needs a cathartic and attempts to "beat nature" to it with a cathartic until he gets firmly fixed in his mind an idea that the bowels will not move of themselves. Unbalanced dietary is a cause of constipation. Reflex irritations as a diseased gallbladder or appendix, an ulcer, or pelvic conditions are prolific causes of constipation. Irregular habits and failure to promptly answer the call to evacuation soon result in a loss of the call and eventually in inflammation of the pelvic loop, and should be named as causes of constipation. Unusual stress or any strain that is beyond the ability of the patient to carry indefinitely, either physical or mental is a great cause of constipation. The removal of bulk from the diet is the one great means of reducing irritation to the colon. The diet must be reduced to liquids of no residue and kept thus until bowel movement has been accomplished. After this the diet can be increased gradually and carefully. Medicinal treatment is mainly of a negative character. All cathartics are stopped entirely and the patient is impressed that they must not be taken again except in great emergency. Enemas whether medicated or plain are also stopped as they are a source of irritation. Clarke gives an intestinal powder every three hours in the beginning. It not only provides bulk but it is nonirritating while the patient is on a nonresidue diet, and it is also very soothing and healing to the irritated mucosa and nerve endings. It should be reduced gradually as bulk is put back into the diet. The powder contains bismuth subnitrate, calcium carbonate and calcium phosphate each 1 ounce taken in one teaspoonful dose, every three hours in water. An oil enema of cottonseed oil should be given every night at 8 or 9 o'clock. Heat to the abdomen is very essential. Fomentations should be given every three hours each set lasting from fifteen to twenty minutes. Rest is of vital importance especially to the exhausted patient. Exercise, instead of rest is beneficial only to those patients suffering from dyschezia.

New Jersey Medical Society Journal, Orange

February 1923 20 No 2

- Uterus and the Curet A S Harden Newark N J—p 37
Treatment of Hypertension in Cardiorenal Disease D Riesman Philadelphia—p 41
Autosuggestion T R Chambers Jersey City N J—p 46
Mental Abnormalities and Problem of Eugenics A Gordon Philadelphia—p 47
Interest of Medical Profession in Public School Hygiene H W Haight Highland Park N J—p 55

New York Medical Journal and Medical Record

Feb 7 1923 117 No 3

- *Diagnostic and Therapeutic Importance of Some Typical Tender Bone Points R Bastianelli Rome Italy—p 1
Bifurcation Treatment of Irreducible Acquired or Congenital Hip Dislocations A Lorenz Vienna—p 10
Lorenz Bifurcation Operation D D Ashley New York—p 115
Correction of Congenital Club Foot E H Bradford Boston—p 132
Foot Strain in Golf N D Mattison New York—p 14
Ma age in Sprains Dislocations and Fractures P Kourilsky Paris France—p 145
Exercise in Acute Infectious Arthritis S W Boettstein New York—p 140
Results of Exercise for Correction of Pectoral Deformities R J Cook New Haven Conn—p 155
Contracted Achilles Tendon A Goebel Los Angeles—p 1
Diagnosis and Treatment of Minor Injuries to Lumbar Spine P Sarcilicac Joints M B Cooverman Philadelphia—p 152
Suppurative Arthritis H Cook New York—p 153
One Hundred Cases of Adenitis of the Cervical Glands J C Adams New York—p 16

Diagnosis
Points—A

Dr. Robert Bell

plain of pain in various parts of the body, of which it is difficult to establish the seat and the nature, and consequently they are treated as suffering from nervousness, neuralgia, hysteria, or from material diseases of organs or parts of the body in the neighborhood of the pain, e g, loose kidney, intestinal neuralgia, chronic appendicitis, arthritis, or peritonitis. Bastirrelli has paid a great deal of attention to the bones as the possible location of the pain. The treatment instituted, directed toward the affected bone, has been successful. It consisted of the injection of from 10 to 20 minims of phenol, 3 100 or 5 100, deeply on the bone exactly at the painful point. The injection must be repeated four or five times at different intervals according to the reaction. In the chronic cases, especially of the superior humeral, superior tibial, posterior lumbar, and rib and scapula points, the results have been extraordinary, less in the epicondyle and styloid pain and in the coccygodynia, perhaps because it is more difficult to inject them well. In the acute form, the reaction is more severe and the disease for the time being becomes worse.

U S Naval Medical Bulletin, Washington, D C

January 1923 18, No 1

- Study of Earth Sciences, Its Purpose and Its Interrelations with Medicine T W Vaughan—p 1
 Psychometric Tests for Recruiting Stations J R Poppen—p 14
 Problem of Malaria in Marines in Haiti A H Allen—p 25
 Functions and Organization of Medical Corps Units Serving with Marine Corps in Field S N Raynor—p 31
 Psychoneuroses and Their Treatment W O Krohn—p 39
 *Use of Chaulmoogra Oil Derivatives in Leprosy C B Van Gaasbeek—p 50
 Hygienic Laboratory of Republic of Haiti R M Choissier—p 56
 Modeling Compound Impressions H E Harvey—p 61

Use of Chaulmoogra Oil Derivatives in Leprosy—Thirty-seven patients in the leper colony on the island of St Croix, Virgin Islands, were treated with the ethyl ester derivatives of the fatty acids of chaulmoogra oil. Gaasbeek and his associates gave 1 cc the first week intramuscularly into the buttocks, 2 cc for the next three weeks, 3 cc for the following six weeks, at which time the supply of the drug was exhausted and the treatment was discontinued until a new supply of the oil was received about five months later. The nasal smear was positive for *Bacillus leprae* in twenty-three of those who received the treatment. Under treatment the nasal smear became negative in every case. The effect on the nodules was remarkable. Although the nodules were not directly injected, they could be seen getting smaller week by week. The effect on the macules was no less striking. The duration of the disease had no effect on the disappearance of the macules under treatment. On the leprosy ulcerations the results were not so striking. The duration of the disease did not seem to have any effect on the healing of the ulcers. Healing seemed to depend rather on the duration of the ulcer and the extent of the anesthesia. In cases in which the ulcers were comparatively recent and the anesthesia slight, there was prompt healing when treatment was instituted. In cases in which the ulcers were of long standing and involved bone, and the anesthesia was total there was no change or, at the most only slight improvement. The effect on disturbed sensation was marked. At the beginning of the treatment there was anesthesia, either slight, marked or total, in thirty-five patients. In six patients the anesthesia cleared up entirely, in twenty there was improvement, while in the remaining nine there was no change. On the whole, more marked improvement was observed in patients having leprosy less than five years although considerable improvement was found in those of from five to ten years' duration. Those that showed no improvement had had leprosy six, eight, thirteen, eighteen and twenty-five years, respectively. These observations have led the observers to conclude that the ethyl ester derivatives of chaulmoogra oil have a very definite place in the treatment of leprosy. It is believed that they will cure some cases especially those of relatively short duration, and it is known that they will bring about improvement in a majority of patients to such an extent as to permit their parole. No harmful effects have been observed from its administration.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Feb 3 1923, 1, No 3240

- Microbic Transmissible Autolysis J Bordet—p 175
 *Malignant Diseases of Breast C A Morton—p 178
 Cataract Extraction Followed by Symptoms Suggestive of Sympathetic Ophthalmia F Fergus—p 182
 "Tetanus in Meningitis H B Shaw and C D Shapland—p 183
 Diaphragmatic Hernia of Entire Stomach J G Andrew—p 184
 Hydatid Cysts of Liver Associated with Gallstones and Empyema of Gallbladder and Pleura Recovery M L Ramsay and H F Vella—p 184
 Radiation of Pain in Lesions of Fallopian Tube M Marcus—p 185
 Case of Ritter's Disease (Dermatitis Exfoliativa Neonatorum) R McD Cairns—p 186
 Posthippocratic Schools of Medicine R O Moon—p 187

Malignant Diseases of Breast—The records of 120 consecutive cases of ordinary glandular cancer of the breast, subjected to operation during the ten years preceding 1921, are analyzed by Morton, with reference to the proportion of cases with local recurrence. The late results as to local recurrence were traced in eighty of the 120 cases. Of the remaining forty cases, some patients died with distant metastases without local recurrence before the end of three years after the operation, others died also during this period of intercurrent disease, and in some cases the cause of death was unknown. Thirty-seven patients were free from recurrence three years or later after the operation, and forty-three had local recurrence. Of the thirty-seven, twenty-five had no recurrence five years or later after the operation. Recurrence has been most frequent in the pectoral region. There were twenty cases of supraclavicular recurrence. In no case has Morton ever encountered a recurrence in the downward direction, and he has never made a practice of any special clearance of the tissues in this direction. The special feature of the operation performed by him is the supraclavicular extension.

Lancet, London

Feb 3 1923 1, No 5188

- *Progressive and Malignant Endocarditis in Childhood F J Poynton—p 215
 *Immediate Microscopic Diagnosis of Tumors at Time of Operation E H Shaw—p 218
 *Causes of Death in Chronic Valvular Disease of Heart J Cowan and J K Rennie—p 223
 *Cardiac Rheumatism of Childhood M O Raven—p 226
 Anthrax Infection by Shaving Brushes F A Knott—p 227
 Case of Extra Uterine Pregnancy A McMurray—p 228
 Case of Retroperitoneal Fibroma Arising from Anterior Common Ligament W H Ogilvie—p 228

Malignant Endocarditis in Childhood—Malignant endocarditis in childhood, Poynton says, shows the same features as in the adult, though, as a rule, it is more rapid in its course. There are fever, sweating, anemia, purpura, Osler's spots, infarctions, optic neuritis and retinal hemorrhage, drowsiness, aneurysms, diarrhea, cerebral hemorrhage or embolism, hematuria, enlargement of the spleen, cardiac bruits, and a continual excited action of the heart. Poynton has seen in a child a femoral aneurysm as large as a coconut from an embolus in that vessel. This likeness to the adult cases is most significant when the close association with acute rheumatism is seen. Poynton holds that there is a rheumatic malignant endocarditis which may arise from the simple form or be primary in origin. Further, he believes that the mysterious cases of streptococcal origin in adults are either primary cardiac rheumatism of a malignant type or if not actually rheumatic, more closely allied to the rheumatic infection than any other. In other words, they are due to a strain of that group. Cases are cited as proof that a study of rheumatic heart disease is probably one of the best methods available at present for throwing light upon malignant endocarditis met with not only in childhood, but also in adult life.

Immediate Microscopic Diagnosis of Tumors—Shaw describes in detail his method of cutting frozen sections of fresh tissues a procedure which he first recommended for general use in 1910 but which he originated in 1899. Two alterations were made some years ago: (1) substitution of

the ethyl chlorid spray for the old ether apparatus—by this means a piece of tissue may be frozen on any flat piece of roughened glass, metal, or even wood, and (2) diluted instead of full strength stain, which acted too quickly and gave very dense pictures

Causes of Death in Chronic Valvular Disease of Heart—In the 100 cases of valvular disease found by Cowan and Rennie to be present on postmortem examination, nineteen cases were purely acute, while eighty-one cases were, in part at any rate, chronic. In all of these cases an antemortem diagnosis had been made. In thirty-nine of the eighty-one cases of chronic valvular disease an acute or subacute endocarditis was found to be also present. Paroxysmal tachycardia was present in twenty-one cases. In one case death ensued as the result of recurring attacks of paroxysmal tachycardia. In one case death ensued in a patient who had full heart block. Of these eighty-one cases of chronic valvular disease the cause of failure was in two cases unknown. In six cases death ensued from causes quite distinct from the cardiac disease. In eleven cases cardiac failure followed the activity of factors outside the heart. Of the other sixty-two cases, in forty-nine the heart itself seemed to be the prime factor in the failure, and in thirty-nine of these an acute endocarditis was present at death. The commonest cause of cardiac failure in chronic valvular disease seems thus to be an acute reinfection of the cardiac valves. Acute endocarditis is most common in rheumatic patients, and least common in syphilitic patients. Of fifty-eight cases of acute endocarditis, nineteen purely acute and thirty nine associated with chronic lesions, thirty-two were rheumatic and only one syphilitic. One patient had suffered from both diseases. The immediate cause of death in cases of chronic valvular disease is varied. In some a general sepsis is present, in some embolic lesions in the organs occasion death, in some the valvular fault progresses beyond the point where compensation can be effected. But in probably the majority of cases the cause of death is muscular weakness from the associated myocardiitis.

Cardiac Rheumatism of Childhood—The treatment followed by Raven, in the main consisted of recumbency, fresh air, and warmth. The most severely ill patients have been kept strictly recumbent against bed rests for from eight to fourteen months; the others have been allowed to get up little by little, as the symptoms subsided, beginning at a quarter of an hour a day and working up gradually to a full day before discharge, then they have always been sent back to the hospital or physician that sent them for further observation. Treatment by drugs, useful though they undoubtedly are—particularly salicylates, digitalis, and opium in appropriate cases—is regarded only as accessory to a general management on these lines.

Indian Medical Gazette, Calcutta

January 1923 58 No 1

- Therapeutics of Antimony R N Chopra—p 1
Malaria Survey of Sawantwadi State C Strickland—p 7
What Are the Departures from Health and Diseases Which Arise from Negligence Ignorance and Self Indulgence of Man? J W Cornwall—p 15
Use of Nonmotile Strain of Bacillus Typhosus in Agglutination Reac

Unusual Fetal Malpresentation—Rowland relates the case of a pregnant woman whose abdomen was so large as to lead to a suspicion that the case might be one of twins. On making an examination per vaginam the head (vertex), hand and foot were found firmly impacted in the vagina the head being between the hand and foot. It was found impossible to return any one of the presenting parts into the uterus. The possibility of interlocked twins was thought of but no definite diagnosis could be arrived at. The head was perforated with great difficulty owing to the edematous condition of the vagina, and an arm was removed at the shoulder joint. Attempts made to bring down the leg simultaneously pushing back the head into the uterus failed. When the head was severed from the thorax by cutting through the neck it was possible to push the head into the uterus. A leg was pulled down and the body of a full-term child of normal size was extracted. On completion of delivery it was found that the woman had a sessile submucous fibroid tumor the size of a large orange situated in the upper segment of the uterus. The tumor was incompletely split in halves. Previous to this confinement the patient had had two normal deliveries.

Irish Journal of Medical Science, Dublin

January 1923 5, No 11

- Principles of Therapeutics T G Moorhead—p 485
Unsatisfactory Appendicectomies Wm Doolin—p 495
*Cases of Diabetes and Leukemia J W Moore—p 507

Cases of Diabetes and Leukemia—Moore cites two cases one of diabetes mellitus in a girl aged 14 years, complicated in its final stages by xanthoma diabeticorum, and one of myelogenous leukemia in a boy, aged 11 years.

Medical Journal of Australia, Sydney

Jan 6 1923 1 No 1

- Dysentery Bacillary and Amebic E M Little—p 1
Head Injuries of War B T Edye—p 5
Gas Gangrene in Military and Civil Practice K Inglis—p 7
Ocular Syphilis J C Douglas—p 9
Tonsils Considered by a General Practitioner G P O Day—p 13
*Case of Tuberculous Meningitis W E George—p 14

Acute Tuberculous Meningitis—George relates the case of a boy aged 12, who became suddenly ill the chief symptom being headache. This and other symptoms led to a provisional diagnosis of enteric fever. The Vidal test was negative. No bacilli were recovered from the feces, urine, or blood. On the thirteenth day the patient had a sudden rigor. Four days later the leukocytes numbered 20,000 90 per cent being polymorphonuclear cells. He was becoming more drowsy. Within a week the diagnosis of meningitis was evident. The patient died about three weeks after the onset of his illness. At the postmortem examination, an old adhesive pleurisy of the whole of the upper lobe of the right lung was discovered. On section the same lobe was found to contain numerous caseous tuberculous nodules. Both cerebral hemispheres were greatly congested and the meninges in the vicinity of the pons varoli were hyperemic and contained a great deal of subjacent meningeal exudate. The brain was clear and showed increased lymphocytes. No bacteria were isolated on culture. The case was in every way typical of the differential diagnosis and the persistence of the polymorphonuclear reaction in an acute

pletely free from albumin. The later day cessation of the albuminuria, in the few cases in which it was observed, has also been variable in its occurrence. The cessation was not due to adaptation to the upright position acquired in the course of the day, but its explanation has yet to be found. It was evident, however, that there is a close association between the quantity of urine secreted and the amount of albumin contained. In general, the two curves are inverse in direction, but the albumin excursions are probably exaggerated by the assumption of the upright position. Profuse diuresis generally puts an end to the excretion of albumin, even in the standing position. When the urine is persistently and abnormally scanty, the two curves cease to show any relation to one another. In most of the cases examined there was a marked delay in the secretory response to the intake of a fixed quantity of fluid. In the more obviously nephritic cases, the albumin response to the upright position was not immediate, except during a subacute exacerbation. Russell noted that in the more definitely "orthostatic" cases, standing at once and invariably gave rise to albuminuria, except during a period of diuresis.

Fractional Test Meal in Study of Disorders of Gastro-Intestinal Tract—In the course of an investigation extending over two years, the fractional method of gastric analysis was applied by Hunter to 270 patients. In 174 of these cases the diagnosis was considered proved. In fifteen cases of chronic ulcer of the duodenum, the fractional test meal findings were remarkably constant. Eighty-eight per cent of cases showed curves considerably above the limits of normal. In every uncomplicated case there was copious secretion of transparent fluid and rapid emptying. In fifteen cases of chronic ulcer of the pyloric end of the stomach, the findings were less constant, 67 per cent of cases showed curves above the limits of normal. The typical curve was one with a high resting fluid, a gradual climb to a high level, and a slight terminal drop. Emptying was delayed. In twenty cases of chronic ulcer of the body of the stomach there was no constant finding. In 50 per cent of cases the curve remained within the limits of normal, while in 35 per cent it rose above these limits. An observation of some importance is that in 38 per cent of cases, where the ulcer was situated posteriorly, macroscopic blood appeared. In cases of hour-glass constriction of the stomach, and in a small group of cases with ulcer on the anterior aspect of the body of the stomach, the findings were similar. There was complete achlorhydria with rapid emptying, but there was an excess of opalescent fluid and little mucus. Forty-three cases were examined after gastrojejunostomy. All showed deep bile staining of more than half the specimen and in 90 per cent of cases bile was found in the fasting gastric fluid. In 70 per cent of cases the meal disappeared more rapidly than before operation, the average time of emptying being one hour and fifteen minutes. In two cases of gastrojejunal ulcer the acid curves were above the limits of normal. Of fifteen cases of carcinoma of the stomach investigated, in 67 per cent the curves showed complete achlorhydria. The specimens were usually copious and contained dirty mucus. Macroscopic blood appeared in 27 per cent of cases of which half were operable. Nine cases of chronic appendicitis were investigated. In 78 per cent of these the curves were within the limits of normal. Seven cases of gallstones were investigated, some associated with acute cholecystitis and some with chronic cholecystitis. In 83 per cent of cases the curves fell within the normal limits. Eight cases were investigated in which the common bile-duct was obstructed. Very high acid curves, either of the plateau type or of the climbing type appeared in 88 per cent of cases. In a great variety of conditions there occurred a complete achlorhydria and the specimens were scanty, difficult to withdraw and mixed with mucus. Such findings were invariably associated with rapid emptying. In the majority of cases examined of viscerophtosis, pernicious anemia, and cirrhosis of the liver these findings were present. In cases of myeloid leukemia, acute rosacea, and lupus erythematosus there was a low hypochlorhydria. A prolonged secondary anemia such as may be produced by repeated small hemorrhages from a duodenal ulcer, may result in achlorhydria. Further this may return after return of the blood condition to normal.

Archives Franco-Belges de Chirurgie, Brussels

September-December, 1922, 25, No. 12

- *Goiter with Metastasis E. Delannoy and A. Dhalluin—p. 1047
- *Juvenile Deforming Osteochondritis Vignard—p. 1088
- *Palpation of Hip Joint Through Rectum J. Cottalorda—p. 1092
- *Regional Anesthesia of Neck and Arm Brunin and Vandeput—p. 1098

Simple Goiter with Metastasis—Delannoy and Dhalluin describe a case with photomicrograms, and compare it with 71 cases from the literature. Their conclusion is that these goiters with metastasis are always malignant, although the primary cancer in the thyroid may be latent. The data presented emphasize the necessity for examining the thyroid for unsuspected malignant disease whenever a neoplasm is found in a bone. In the cases tabulated, the metastasis was in a bone in all but a few cases, with or without metastasis elsewhere. In one man, 65 years of age, the metastasis was in the eyebrow. In another, aged 63, with a large goiter of four years' standing, there were metastases in liver, kidneys, pleura and lungs. The bones involved were mostly in the upper part of the body, but in some cases the metastasis was in the pelvis or femur. In 30 cases the spine and in 19 the skull were involved. In 17 cases death occurred in less than a year after the metastasis had been noted, in 15 within five years, of the 39 cases in which the outcome was recorded. In Helbing's case the man, aged 31, survived for seventeen years, the metastases were in sternum, femur and spine. In Wilkens' case the man, aged 72, with metastases in skull and lumbar spine, lived for seven years.

Juvenile Deforming Osteochondritis of the Hip Joint—Vignard describes the findings in two cases in which he operated. The joint became totally stiff thereafter in the boy, 14 years old, but complete function was regained in the girl, aged 9. In this case, nothing abnormal was found when the cartilage was divided.

Palpation of Hip Joint Through the Rectum—Cottalorda refers to cases of fracture of the acetabulum, of which he has compiled ninety-nine cases, in addition to ten from his own experience. He experimented further on the cadaver. All this experience testifies that palpation through the rectum does not reveal conditions in the hip joint unless the finger is exceptionally long, the patient thin and docile or deeply anesthetized, and the acetabulum much out of shape.

Regional Anesthesia for Operations on Neck and Arm—This is the concluding portion of an exhaustive study of ways and means for blocking the nerves to allow operations on different areas of the neck, arm and hand.

Archives des Maladies du Cœur, Paris

December, 1922, 15, No. 12

- *Cardiac Disturbance from Arteriovenous Aneurysm I. Nanu et al.—p. 829
- *Oxydases and Peroxydases of the Blood J. Sabrazes—p. 841
- *Auricular Insufficiency in Chronic Lung Disease Lutembacher—p. 849
- *Cardiac Disturbances Following Arteriovenous Aneurysm—Nanu, Alexandrescu-Dersca and Lazeanu describe two cases of arteriovenous aneurysm of the leg in which operation was followed by recovery from cardiac disturbances. Even the dilatation of the heart was well influenced.

Oxydases and Peroxydases of the Blood—Sabrazes reviews the question of oxydases and peroxydases of the blood cells. Monocytes with an oval nucleus do not contain peroxydase, polymorphonuclears give the reaction, although it is not very strong. Eosinophils contain more peroxydases than the neutrophils. It is interesting to note that in the pus of acute gonorrhea those parts of neutrophils which contain gonococci, have lost the peroxydase. The mast cells from the peritoneal cavity of white rats, the megakaryocytes and blood platelets, did not give the reaction.

Archives Medicales Belges, Liege

December 1922, 75, No. 12

- *Neurasthenia F. Dauwe—p. 1169
- *Protein Therapy in Genito-Urinary Diseases G. d'Hooghe—p. 1195
- *Eugenics Govaerts—p. 1201

Neurasthenia—Dauwe makes a detailed study of the physical symptoms and mental condition in neurasthenia.

Protein Therapy in Genito-Urinary Diseases—D'Hooghe publishes cases of chronic urethritis, acute epididymitis, gonorrheal arthritis and gonorrheal conjunctivitis in which protein therapy was successful. It was also applied in skin and syphilitic affections, often with favorable results.

Eugenics—Govaerts concludes that eugenics belongs in the domain of social medicine. It consists principally in the knowledge of heredity and the action of social institutions on the transformation of the race. It teaches us that if we do not combat hereditary causes, all improvements brought into the life and work of a generation will be only temporary and they will have to begin all over again in the next generation. It shows the necessity of taking into consideration the child of tomorrow as well as the man of today.

Bulletin de l'Académie de Médecine, Paris

Jan 2 1923 89 No 1

- The Past and Future of Pharmacologic Chemistry Behal—p 2
 *Diabetic Acidosis A Desgrez et al—p 25
 *Constitutional Irritability and Respiratory Spasm E de Massary and J Walser—p 33
 *Retraction of Palmar Aponeurosis Peugniez and Joly—p 35
 Backward Lowering of the Root of the Tongue Causing Respiratory Disturbances P Robin—p 37

Diabetic Acidosis Action of Levulose—Desgrez, Bierry and Rathery emphasize the influence of different rates of absorption on the assimilation of carbohydrates. Some diabetics tolerate levulose distinctly better than glucose. They maintain, contrary to Labbe, that the acidosis due to lack of carbohydrates is essentially the same as the acidosis of diabetics. The difference of opinions is due to confounding the acidosis of complete fasting with the acidosis from absence of carbohydrates with a large supply of fat. The fat, in an auto-experiment of Forssner, led in three days to a daily excretion of 4280 gm of acetone bodies. The symptoms of intoxication forced the scientist to stop the experiment, because he did not intend to commit suicide.

Emotional Instability and Respiratory Spasm—De Massary and Walser discuss almost monosymptomatic forms of what they call constitutional hyperemotivity, *emotivité anxiieuse*. The cardinal symptom may be respiratory, circulatory or digestive. The respiratory affection merits consideration as a real morbid entity. It consists in a sensation of oppression, feeling of difficulty in breathing, and characteristic uneasiness, which may increase to actual distress. By distracting the patient's attention it is possible to diminish the severity of the disturbance. The influence of the pneumogastric nerve is the evident cause and other manifestations of vagotonia are found constantly (oculocardiac reflex), or frequently in these cases (hyperacidity, sweats, respiratory arrhythmia, hypotension). Atropin has a curative action on the condition.

Retraction of Palmar Aponeurosis Cured by Penetrating Roentgenotherapy—Peugniez and Joly report the case of a patient with retraction of the palmar aponeurosis who recovered after roentgen-ray treatment.

Backward Fall of the Root of the Tongue as Cause of Respiratory Disturbances—Robin gives a description and pictures of an overlooked cause of respiratory disturbances in the upper respiratory passages. The seat is in the oral pharynx and the obstruction is due to a backward lowering of the root of the tongue. To overcome it the patient has to open the mouth. The angles of the lower jaw are nearer together than normal the chin is receding. The respiratory difficulty ceases if the patient is instructed to protrude his lower jaw so that the lower teeth come in front of the upper ones. An apparatus which causes such propulsion of the chin is the adequate treatment of the condition.

Bulletin Médical, Paris

Jan 13 1923 37 No 2

- *How Should Hodgkin's Disease Be Classified? Gastinel et al—p 39
 Subcapsular Thyroidectomy in Exophthalmic Goiter T Asteriades—p 45
 Innervation and Chemical Excitants of Tissues Guillaume—p 46

How Should Hodgkin's Disease Be Classified?—Gastinel, Reilly and Potez ask this question and state that Hodgkin's disease from a nosologic standpoint is a transition between

and association of tumors and inflammatory lesions. From an anatomic standpoint, it is a morbid entity, and should be called 'malignant lymphogranuloma'.

Surgical Treatment of Exophthalmic Goiter by Subcapsular Thyroidectomy—Asteriades describes and extols Astraids' method of subcapsular thyroidectomy under local anesthesia. It is simple, without danger, rapid and sure. He reports fifty-seven brilliant successes' with this technic in fifty-seven cases.

Encéphale, Paris

December 1922 17 No 10

- Cervical Neurofibroma E Flatau and B Sawicki—p 617
 Neurosyphilis C I Urechia and D N Eleke—p 627
 *Psychic Origin in Organic Affections W H B Stoddart—p 638
 Galvanic Nystagmus J Moline—p 641
 Epidemic Encephalitis with Pithiatism A Gilles—p 644
 True Melancholia and Periodic Asthenia R Benon—p 646

Psychic Origin of Certain Organic Affections—Stoddart draws attention to the fact that many apparently organic affections may be due to psychic causes which can be discovered and treated by psychoanalysis.

Journal de Radiologie, Paris

December 1922 6 No 12

- Electrical Methods in Diagnosis and Prognosis of Peripheral Paralysis G Bourguignon—p 565
 Electrodes for Surgical Diathermy H Bordier—p 595

Revue Franç de Gynecologie et d'Obstet, Paris

December 1922 17, No 12

- *Tubal Abdominal Pregnancy E Zarate et al—p 625
 *Thirty Six Pregnancies L Laurentie—p 645
 *Typhoid Bacilli in Fetal Blood J Vignoli—p 646

Extra-Uterine Pregnancy at Term—In the case reported by Zarate Rojas and Widakovich the fetus had continued to develop after unnoticed rupture of the gravid tube. The uterus enlarged correspondingly with symptoms of labor at term. The child was extracted and seems to be developing normally at the age of 6 months. The neck is short and the face too large for the head, but there is no pronounced deformity. It was the third pregnancy, the second had terminated in an abortion. In five cases summarized from the records two children had developed normally to the fourth and ninth year. Another child is mentally backward the others died soon after birth, one of the mothers died. If the fetus in an extra-uterine pregnancy survives to the fifth month, it generally goes to term. When diagnosed in the first half of pregnancy operative treatment at once is imperative unless the woman objects. The exaggerated weight of the lower abdomen fetal movements felt close to the skin and the fact that they are generally painful aid in the diagnosis. Internal examination is liable to entail abortion or premature delivery. The diagnosis during the first months is based on the diffuse abdominal pains and the symptoms of rupture of the tube with or without external hemorrhage. The false labor is liable to injure the fetus it should be extracted at once. The authors were able to extract the sac with the placenta still adherent and the first 5 cm of the tube and the ovary. There was scarcely any hemorrhage. The child weighed 2860 gm.

Thirty-Six Pregnancies—Laurentie reports a Syrian woman now 85 who has borne twenty-four healthy children and has had twelve abortions. She did not nurse the children. She is exceptionally well preserved for her age. Her mother had twenty-three children.

Typhoid Bacilli in Fetal Blood—Typhoid bacilli were cultivated from the blood of the umbilical cord of the premature child of a woman with typhoid. Serologic tests were negative with both mother and child.

Jan 25 1923 18 No 2

- Low Cesarean Section P Cufiani—p 3
 Sedimentation of the Blood in the Pregnant H Vignes and I Hermet—p 4
 Flushing the Uterus in Cervical—p 5
 Low Cesarean—p 6
 Intra-peritoneal—p 7

uterus, as he observed them in the fifty cases he describes, including several with beginning infection. The pregnant uterus at term was removed in one case two years later, no trace could be found of the incision without the microscope. Conditions in the lower segment are more favorable for healing. In eleven cases the cesarean section was repeated, and the cicatrix was solid in all even when expectant treatment had been pushed to the extreme.

Sedimentation of Erythrocytes—Vignes and Hermet found that sedimentation was accelerated in the blood of women advanced in pregnancy, but not early in pregnancy. They found it accelerated also in animals whose blood was being drawn repeatedly for antisera.

Washing Out the Uterus in Treatment of Puerperal Infection—Pierra refers to the revival of continuous irrigation as a means of treating infection limited to the cavity in question. The conditions in the uterus are much like those in a war wound, and Anderodias has reported 133 cured of 148 cases of puerperal infection. In 3 of the cases in which it failed, death was explained by kidney or lung disease. Perazzi's 6 patients all recovered, also Petit's 2, including one complicated with a gangrenous fibroma, and Michon's 12 of febrile abortion. In some of this last group curetting had failed to relieve. Pierra found it equally effective in a case of gravely infected criminal abortion. The fluid used totaled from 300 to 600 c.c. in the twenty-four hours. Petit used four to eight tubes, injecting 10 c.c. through each, every two hours, to a total of 500 to 1,000 in the twenty-four hours. Some used surgical solution of chlorinated soda, others preferred a milder disinfectant. Pierra and Michon used and prefer a 1:250,000 solution of silver nitrate (10 drops of a 1 per cent solution to the liter of water). The weak solution stimulates repair and destroys micro-organisms without injuring the tissues.

Schweizer Archiv fur Neurol u Psychiatrie, Zurich

1922 11, No 2

- *Rigidity in a Torsion Spasm After Encephalitis R. Mourgue—p 163
- Parallelism of Psychic and Motor Activity H. Steck—p 208
- Treatment of Epilepsy V. Demole—p 215
- Tubercle in Tegmentum of the Pons H. W. Stenvers—p 221
- Cerebral Syphilis and Psychoses L. Redaie—p 230
- *Pituitary Gland in Cerebral Lesions V. Desogus—p 244
- *Dysthyroidism, Anaphylaxis and Epilepsy V. M. Buscaino—p 261

Decerebrate Rigidity in a Torsion Spasm After Encephalitis—Mourgue gives a clinical study of a case of a typical torsion spasm after epidemic encephalitis, and discusses the literature, especially with regard to the action of the liver in Wilson's disease. The patient had an alimentary levulosuria. Mourgue considers the extrapyramidal syndromes as affections of the general metabolism of proteins.

Pituitary Gland in Cerebral Lesions—Desogus investigated the influence of different cerebral lesions on the pituitary gland in fifty dogs. He destroyed in some of them both occipital lobes, in others the parietal or frontal lobes. He found hyperemia and hypersecretion of colloid and a strong eosinophilia from twenty to thirty days after the operations. Between thirty and sixty days a regression takes place which reaches its maximum during the next month. After a hundred days, the pituitary becomes normal.

Dysthyroidism, Anaphylaxis and Epilepsy—Buscaino found in thyroids of epileptics and of persons suffering from epileptic convulsions, crystals which he considers as abnormal proteins. Popovici found that Abderhalden's reaction is much more frequent and strong if the thyroid from epileptics is used. He considers epilepsy as an anaphylactic crisis due to these proteins and proposes extirpation of the thyroid and subsequent substitution by tablets in the systematic treatment of epilepsies.

Archivio Italiano di Chirurgia, Bologna

December 1922 6 No 4

- *Mixed Tumor of the Orbit G. M. Fasani—p 333
- Operations on Hour-Glass Stomach C. Gamberini—p 347
- Pseudo-Hydronephrosis G. Razzaboni—p 365
- *Absorption by the Tunica Vaginalis L. Torraca—p 407
- Treatment of Extrophy of the Bladder U. Camera—p 421

Mixed Tumor of the Orbit—Fasani resected temporarily the external wall of the orbit, and this allowed easy enucleation of the tumor. It had been developing for five years in the right eye of a man in the thirties. It was as large as a pigeon's egg, and was encapsulated. After its removal the eyeball returned to its normal place, with vision 1/4.

Hour-Glass Stomach—Gamberini operated for organic hour-glass stomach in eleven of his 150 operations on this organ. In some cases he made a gastro-enterostomy in each half of the stomach. In other cases he made a very long opening, extending at each end beyond the narrow portion of the stomach. In other cases he resected and sutured the duodenum to the stump of the stomach, proximal from the narrow portion. The various cases are illustrated.

False Hydronephrosis—Razzaboni applies this term to accumulation of urine in a cystic pouch, independent of the kidney parenchyma. He produced typical lesions of the kind in twenty-five rabbits and dogs by hampering the circulation, as he shows with photomicrograms. The kidney suffers, and actual hydronephrosis or atrophy results unless the cystic accumulation in the perirenal or pararenal tissues is removed in time. This kidney may then recuperate completely. There is no need to resect the kidney with pseudohydronephrosis unless irreparable lesions are already present.

Absorption by the Tunica Vaginalis—Torraca injected a stain into the cavity of the tunica vaginalis in seven dogs, and the stain appeared in the urine in from fourteen to twenty-three minutes. In eight men with hydrocele, injected in the same way with the stain, it did not appear in the urine at all in two, and in the others it did not appear until after an interval of from one to nearly seven hours, and most of the stain lingered in the tunica for days.

Extrophy of the Bladder—Camera describes a modification of the Second autoplasmic method which he applied in a boy, aged 5, with excellent outcome. He utilized the scrotum instead of the prepuce to cover the defect left by the Second technic. The testicles in cases of extrophy are usually ectopic, and the scrotum provides a stout and well nourished flap. This method might be applied to small boys even when a radical operation is planned later to do away with the urinal.

Pediatria, Naples

Jan 1 1923 31, No 1

- *Scarlet Fever G. Di Cristina—p 1
- *Treatment of Typhoid and Malta Fever G. de Finis—p 11
- *Leukocyte Extracts and Gartner's Bacillus A. Ronchi—p 24
- Encephalitis and Chorea S. de Stefano—p 38

Scarlet Fever—Di Cristina claims that specific germs from blood and bone marrow from patients with scarlet fever can be constantly found in anaerobic cultures containing human corpuscles. The development is optimal after fifteen days' incubation. The added blood is hemolyzing and a precipitate forms which makes examination by the hanging drop method impossible. Staining with Löffler's or Giemsa's stain reveals a few diplococci of the size of *Micrococcus catarrhalis*. Young rabbits injected with this material cease after twelve days to increase in weight, and either die slowly from cachexia or do not recover for a long time, although the body temperature hardly increases, and no leukocytosis is present. The anatomic changes consist in intense hyperemia of all organs, a reduction of the volume of the spleen (rarely an enlargement), and parenchymatous degeneration of the kidneys. Recent cultures seem to be more fatal than old ones. Direct inoculations of blood from scarlet fever patients give less distinct results. Serologic tests were not satisfactory. Di Cristina mentions his prophylactic experiment with a preparation of scarlet fever scales subjected to the action of convalescents' serum.

Treatment of Typhoid and Malta Fever with Vaccines—De Finis used Di Cristina's and Caronia's vaccines in ninety cases of typhoid, thirty-five cases of paratyphoid and fifty-five cases of Malta fever. Only one patient, with the paratyphoid bacillus died. The other patients (mostly children) recovered. In many instances the recovery was by crisis after a single injection, other patients required from 3 to 4 injections.

tions at two days interval. Intramuscular injections gave the same results as intravenous.

Action of Leukocyte Extracts on Gartner's Bacillus.—Ronchi's experiments on guinea-pigs demonstrate the preventive and curative effects of autolysates of leukocytes on the usually very severe infection with Gartner's bacillus.

Anales de la Facultad de Medicina, Lima

September-October 1922 5, No 3

- Inaugural Lecture of Surgical Course G Gastañeta—p 177
*Epidemic Encephalitis M Gonzalez Olachea—p 182
*Parasitic Disease of Lungs in Peru A Corvetto—p 196
Inaugural Lecture of Deontology Course G Fernandez Davila—p 205
Inaugural Lecture of Surgical Course P S Mimbela—p 213
Etiology of Frenasthenia L Ciampi and H Valdivia—p 224

Epidemic Encephalitis.—The sudden onset of intense frontal and orbital headache was the first symptom of the disease. It ran its fatal course in less than a month. It was of the choreo-athetoid type, and there was pronounced softening of the thalamostriatal region of the brain.

Parasitic Pulmonary Diseases in Peru.—Corvetto emphasizes the clinical resemblance to pulmonary tuberculosis of hydatid cyst in the lung, paragonimiasis and bronchopulmonary spirochetosis. In every tuberculosis suspect in tropical countries, search should be made for these parasites. His records include twelve cases of pulmonary echinococcosis and six cases of paragonimiasis in Peru. In the latter disease, besides the imminent danger of fulminating hemoptysis there is danger of embolism from the ova in the arteries. As this parasite requires another host to complete its cycle, it dies in time and is expelled, the patient thus spontaneously recovers. No treatment to date has proved efficacious against the paragonimus, except possibly antimony tartrate which offers some hope of relief. Individual and international prophylaxis is imperative, and the governments of the countries exposed to oriental immigration should be on the alert. Individual prophylaxis is simple. No shellfish or crustacean should be eaten unless thoroughly cooked. To eat them raw is to invite this disease. One of Corvetto's patients was well-to-do, but most of those affected have been laborers in the fields who eat raw crustaceans from the rivers. Only two cases of the Castellani bronchial spirochetosis have been known in Peru to date. One was acute and the other chronic. As this disease is extremely contagious, isolation is necessary until the sputum is free from the spirochetes. This not only wards off contagion of others but protects the patient against superimposed infection to which he is exceptionally predisposed at this time. Concluding his article, which was read at the recent Latin American Congress, Corvetto urged a resolution calling for special study by the public authorities of the countries of America of prophylaxis of these three parasitic pulmonary diseases.

Revista Española de Medicina y Cirugía, Barcelona

December 1922 5 No 54

- *Typhoid in the Army F Soler y Garde—p 687
Serologic Diagnosis of General Paresis Berlamino Rodriguez Arias—p 710
Dietetic Therapeutics A Arteaga Pereira—p 713 Conc n

Typhoid in the Spanish Army.—This is a critical study by an army medical officer of antityphoid vaccination in Spain and elsewhere. Soler insists that deaths from typhoid are the direct moral responsibility of those in authority, as vaccination has proved so harmless and effectual.

Semana Medica, Buenos Aires

Jan 11 1923 1 No 2

- *Hemorrhagic Disease of the Uterus C A Castano—p 43
Menstrual Hemoptysis J Destefano—p 52
*Elements in Intradermal Tuberculin Test A Bergman—p 52
Vaccine Therapy of Chronic Urethritis E Castano—p 52
Suggestion as Factor in Crime III J C Belbey—p 61
Emergency Colectomy E Villagra Muro—p 78
Infant Mortality in Santa Fe E Martinez Zubizar—p 81
Diet for the Insane F Gorriti—p 88
Dose of Sodium Cacodylate M Ruiz Maza—p 88

Hemorrhagic Uterine Disease.—Castano discusses the etiology of hemorrhagic metropathies. He finds that the

disturbance is in the ovary. The uterus is merely the outlet, and it shows only hyperplasia of the endometrium such as occurs physiologically in the premenstrual cycle. Treatment should be by organotherapy and radiotherapy. He has been successful with roentgen-ray treatment in virgins and in the profuse hemorrhages near the menopause. Under other conditions, he prefers radium, and reports 100 per cent recoveries.

Menstrual Hemoptysis.—Destefano comments on the interplay of the endocrine organs in the physiology of menstruation and relates that it can be influenced to ward off menstrual hemoptysis. This is in reality a premenstrual phenomenon, and he combats it systematically by intravenous injection of pituitary extract in the tuberculous inclined to hemoptysis. He begins it each month about ten days before the period and repeats on alternate days till the onset of menstruation. The hemoptysis never returned in women thus treated.

Intradermal Tests for Tuberculosis.—Bergman tested thirty-six patients with intradermal injection of goat or beef serum egg white or other alien protein injecting it with or without admixture of tuberculin. The findings testify anew to the specificity of the tuberculin tests.

Jan 18 1923 1, No 3

- *Drainage of Edema J Destefano—p 101
*Open Air Schools T A Tonina—p 103
Hallucinations of Moving Picture Type F Gorriti—p 110
*Endocrine Basis of Ear Nose and Throat Affections J de la Cruz Correa and R Becco—p 112
Examination of the Kidney in Edema C H Nisegger—p 117
Suggestion in Crime J C Belbey—p 122
Tumor in Left Occipital Lobe Juan M Obarrio—p 128
*Interpretation of Electrocardiogram T Lewis—p 133
*Medical Impressions of America D Speroni—p 142

Mechanical Treatment of Edema.—Destefano indicates the dangers from resorption of dropsical fluid, overloading the heart and flooding the system with dislodged toxins which aggravate the condition of the already damaged kidneys. He had a case in 1914 in which resorption induced a kind of serous apoplexy which proved fatal. On the other hand direct drainage of the fluid by platinum needles introduced into the skin has proved effective and harmless in his experience with 100 cases. The needles are 4 cm long and twice the caliber of the needle used for injection of grey oil. He inserts one on each side of each leg just above the malleoli. The head of the bed is raised by 20 cm to aid the flow with gravity. The needles are left in place as long as needed, in some cases up to four or five days. In one case 27 liters thus drained away in forty-eight hours. Gruze is wrapped around the outer end of the needle to separate it from the skin. Infection of the puncture holes occurred in only one instance. In this case an inflammatory reaction around one hole caused brief fever that subsided within twenty-four hours.

Open-Air Schools.—Tonina reviews the experiences at four open-air schools at Leno. Airs organized since 1904. This class of schools is demanded for weakly children, as the task of the medical school inspector he asserts, can be far more completely than in other schools. He can be empowered to treat the debility and in some cases the underlying chronic malaria, anemia, syphilis or other derangement.

The Endocrine Factor in Disease of the Thyroid.—The thyroid gland is the source of the thyroid hormone, which is essential for the normal functioning of the body. In the case of the thyroid gland, the endocrine factor is of great importance. The thyroid gland is the source of the thyroid hormone, which is essential for the normal functioning of the body. In the case of the thyroid gland, the endocrine factor is of great importance. The thyroid gland is the source of the thyroid hormone, which is essential for the normal functioning of the body. In the case of the thyroid gland, the endocrine factor is of great importance.

article published in the *Archives of Internal Medicine*, September, 1922, p 269

Impressions of America—In his visit to Washington, D C, Prof David Speroni was impressed with the insignificance of the buildings housing the medical schools in comparison to the magnificence of the public buildings At Baltimore, the Pathology Institute attracted his attention most, and especially its arrangement of separate halls for the pathologic findings of different diseases He dismisses the medical clinics and laboratories as not calling for special mention, saying they are no better than those of the Rawson Hospital at Buenos Aires He addressed the students at Washington, describing the Open-Door colony for the insane near Buenos Aires, which has been called by outsiders the best institution of its kind in the world Speroni spoke in Spanish, a Porto Rico student giving a running translation

Deutsche Zeitschrift für Chirurgie, Leipzig

November 1922, 173 No 13

- *Suppurative Pericarditis A Hilse—p 1
- Etiology of Muscular Torticollis O Heinemann—p 15
- *Hypernephroma E Muscholl—p 22
- *Sexual Operations W Haubenreisser—p 31
- *Subcutaneous Extravasation of Lymph R Bonn—p 53
- *Osteomalacia with Epilepsy A Brenner—p 66
- *Luxation of Hip Joint in Adults J Frankel—p 84
- *Hemophilia K H Bauer—p 109
- Lymphogranulomatosis with Infiltrative Growth H Meyeringh—p 185
- Actinomycoma in Omentum F Matz—p 217

Suppurative Pericarditis—Hilse reports two cases in which there was adhesion between the heart and the pericardium One of the young men died after incision of the pericardium by Ollier's method The other recovered after pericardiectomy by Rehn's method About 1 liter of pus was thus released The anterior surface of the right ventricle was adherent to the pericardium A drainage tube was introduced over the vena cava, one on the right and one on the left side, and the incision was left open By the next day all the symptoms had disappeared except the edema of the legs Continuous arrhythmia soon developed, and there is still retraction of the chest wall and diaphragm with the pulse beat Six weeks later walks of 10 km caused no disturbance The puncture can be made below the fifth rib From the left margin of the sternum to the left nipple is the zone in which there is no danger of piercing the heart or lung with a cautious puncture Hilse declares that infection of pleura or lung during the procedure is more serious than running the needle into the heart muscle In both his cases there was pyocyanous infection of the wound The advantage of rinsing with saline during the operation and in changing the dressings was manifest It did not seem to have any appreciable influence on the heart action Several clots of fibrin were thus washed out which otherwise might have obstructed the tubes and entailed adhesions in the pericardium The drainage tubes must not be removed too early, he noted retention of pus as late as the twenty-third day

Hypernephroma—The large Grawitz tumor in the woman, aged 30, had no connection with the kidneys or suprarenals It was growing from the posterior abdominal wall, between the left kidney and the spine, and it was adherent to the pancreas Recovery was prompt after its removal

Sex Gland Operations—Haubenreisser analyzes the results to date of transplantation of testicles, roentgen irradiation of the testicles, and the two Steinach methods of ligating the vas deferens He cites seventy articles reporting experiences in these three lines of sex gland operations and reports ten cases from Payr's service, and four cases given only roentgen-ray treatment Not the slightest influence from the irradiation could be detected, and only one of the patients presented any improvement This was after transplantation of testicle tissue This seems to be the only method which offers results, and this only after late castration The transient effect from the Steinach ligation is due mainly to absorption of hormones from stasis of the testicle secretion, aided by autosuggestion

Traumatic Extravasation of Lymph—Bonn reports four recent cases of what has been called traumatic loosening and separation of the skin Puncture and a compressing bandage are curative in cases of small extent Otherwise he advises

ample incision with swabbing, painting the walls of the cyst-like cavity with tincture of iodine, and draining The walls of the cavity bleed more or less as this is done, and thus the tissues get a more nourishing fluid than the lymph

Osteomalacia with Epilepsy—The epilepsy first became manifest at the age of 25, and osteomalacia developed four years later during pregnancy The clinical picture was that of puerperal osteomalacia, but the course and the tenderness of the skull resembled the osteomalacia from a deficient diet There was a history of rachitis and convulsions in childhood, and of food privation in recent years The condition materially improved under systematic phosphorus and cod liver oil treatment (phosphorus 0.01 gm, cod liver oil, 100 gm A teaspoonful three times a day, to a total of 0.05 gm phosphorus) Calcium and nourishing food were given at the same time In two months the woman was able to get up, after having been bedridden for six months The epileptic seizures have become milder and the intervals longer Epinephrin was not borne well, and had to be abandoned The woman's two children have rickets, and one also has spasmodophilia

Luxation of the Hip Joint in Adults—Frankel refers to unilateral congenital luxation, and discusses the hindrance to reduction which may be offered by the iliopsoas muscle Severing this muscle allowed reduction without further measures in three of the nine cases described

Inheritance and Constitution in Hemophilia—Bauer devotes seventy-six pages to an exhaustive study of 653 hemophilic families, with an average of 52 children per family He explains that science has passed beyond the era of anatomy, of cellular pathology, and is now entering the era of function and energy, with the gene, the invisible rudiment, the transmitted germ of a character, instead of the cell, as the new and final unit for analysis It is at the same time the starting point for a new synthesis, the aim of which is to determine the essential nature of the individuality

Klinische Wochenschrift, Berlin

Jan 1 1923 2, No 1

- *Water Metabolism C Oehme—p 1
- *Fibrous Pericarditis Volhard and Schmieden—p 5
- *Dynamic Protein Fever Rietschel—p 9
- Assay of Guanacol Preparations F Verzar—p 12
- Peristalsis of Capillaries E Kylin—p 14
- Ventricular Fibrillation in Man H v Hoesslin—p 15
- *Salt Metabolism P Jungmann—p 18
- *Kidney Function Tests E Rehn and L Gunzburg—p 19
- *Petrushky's Tuberculin Liniment H Ulrici—p 20
- Mechanical Impulse for Development of Frog's Eggs H Voss—p 21
- *Potassium Ions and Muscle Tonus S M Neuschlosz—p 21
- *Surviving Heart of Homothermic Animals F Klewitz—p 22
- Hemispasm of the Trunk in Infant Sonntag—p 23
- *Paralytic Ileus After Diphtheria B de Rudder—p 23
- Treatment of Pernicious Anemia G Rosenow—p 24
- German Social Insurance Mugdan—p 27
- Vitalism by Conviction V v Weizsacker—p 31
- Creatin Creatinin Metabolism M Burger—p 33

Water Metabolism—Oehme reviews the disturbances of water metabolism and discusses especially its central regulation We do not know anything about the influence of hormones on the central nervous system, but pituitary extract influences the diuresis even after destruction of the nerves of the kidneys No definite proofs were given that the condition of the blood colloids changes in diuresis due to caffeine Comparison of the refraction and viscosity of serum, which should show the alleged changes in dispersion of colloids, had negative results It is more probable that the changes occur in the colloids of the organs themselves—kidneys as well as tissues The tendency of the organism is to develop ontogenetically and phylogenetically toward constancy of blood composition and changes of concentration in the cells These cause the movement of substances into them and from them This regulation is perfected by especially sensitive cells of the central nervous system It is probable that, in cases of diabetes insipidus in which changes were observed only in the pituitary gland, the authors omitted to examine the tuber and the paraventricular nuclei of the brain

Fibrous Pericarditis—Volhard and Schmieden point out that a simple adhesion of the pericardium does not necessarily cause clinical symptoms, but fibrous thickening and

Exophthalmic Goiter Problems—Breitner asks whether exophthalmic goiter is a disease *in generis* or merely the severest form of a pluriglandular affection in which the thyroid plays the leading role. Another question he propounds is whether there can be affections of the endocrine ring in which the thyroid plays such a subordinate part that the clinical picture can be distinguished from the thyrotoxic pictures. He queries further whether a neuropathic constitution, degenerative tendencies and primary nervous disturbances are the real affection and exophthalmic goiter is merely a graft on this or whether it is a part of all the exophthalmic group.

been closely studied from these standpoints. It is already evident, he says, that the extreme cases of exophthalmic goiter must be regarded as the result of the accumulation of a functional oversecretion or undersecretion of all the glands with an internal secretion.

Experimental Research on Atrophy of Muscles—Meyer induced atrophy of muscles in cats, rabbits and guinea-pigs by immobilizing a limb in plaster.

Tonus of Striated Muscle—Sulger discusses the tonus and creatin content of striated muscle under various conditions of tension and innervation.

Zeitschrift fur Tuberkulose, Leipzig

December 1922 37, No 3

- Climatic Treatment of Tuberculosis in German Middle Altitudes A. Baumeister and F. Baur—p 161. Comment C. Flugge—p 167.
Origin of Tuberculosis of Suprarenal Capsules F. Schwarz—p 169.
Treatment of Tuberculosis by Partial Antigen Warnecke—p 184.
Comment on Frey's 'Relaxation Pneumothorax' Gwerder—p 192.
*Calcium Treatment Hartwich-Borrmann—p 193.

Calcium Treatment—Hartwich-Borrmann combines calcium with potassium to dehydrate the organism. The prescription is calcium chloridi 30 parts, potassium acetatis 60 parts, aquae 285 parts. Sig. One teaspoonful in a glass of warm water half hour before breakfast. In exudates, good results were obtained after giving up to 6 teaspoonfuls daily. This treatment has been applied in appropriate cases during the last two years among the 600 inmates of the Lyster Sanatorium in Norway. A number of typical cases are described in detail to illustrate the special advantages in cases with profuse moist rales. The calcium can be given by the mouth or rectum, subcutaneously or by the vein, and in various forms. A dry cough is no contraindication for calcium treatment, but the doses should be smaller.

Zeitschrift fur urologische Chirurgie, Berlin

Jan 15 1923 11 No 56

- *Hypertrophy of the Prostate E. Kornitzer and C. Zanger—p 137.
*Valve Like Closure of Urethra Opening C. O. Schmidt—p 158.
*Technic for Nephrotomy A. Heymann—p 168.
*Perineal Hygroma O. Connerth—p 169.
*Malformation of Uterus One kidney missing G. Eismayer—p 191.

Hypertrophy of the Prostate—Kornitzer and Zanger give photomicrograms from six cases of hypertrophy of the prostate in which connective tissue, muscle and gland tissue were all involved.

Dilatation of Urinary Organs from Valve-like Obstruction to Outlet of Bladder—The protruding abdomen of the pre-natal child measured 35 cm. The diameter was about twice that of the shoulders. A fold in the bladder wall seemed to have acted like a valve to close the inlet to the urethra.

Technic for Nephrotomy—Heymann recommends nephrotomy—without decapsulation—as by far the best means for treating neuralgic pains in the kidney accompanying degenerative nephrosis. To avoid hemorrhage, he incises only the kidney proper, and does not carry the incision into the kidney pelvis. This probably would suffice also for operative treatment of essential hematuria.

Malformation of Uterus and Kidney—Eismayer summarizes from the literature 122 cases of deformity of the uterus with one kidney missing and describes one case. The woman died from puerperal sepsis after premature delivery. The right kidney was abnormally large and the uterus seemed to consist of only the right cornu. There was no kidney on the left side.

Zentralblatt fur Chirurgie, Leipzig

Jan 6 1923 50 No 1

- *Stomach and Disposition to Ulcer W. Koennecke—p 2.
*Recurrence of Gastric Ulcer O. Wiedhopf—p 4.
*Recurrence of Cancer of Breast L. v. Czirer—p 7.
*Testis Transplantation C. Hammesfahr—p 9.
*Treatment of Amputation Stump by Sauerbruch Method Vent—p 12.
*Iontogen Irradiation of Salivary Glands F. W. Kae—p 14.
*Primary Suture After Thyroidectomy O. Orth—p 16.

The Pyloric Portion of the Stomach as Affecting the Predisposition to Ulcer—Koennecke gives the results of experi-

ments on dogs. Four dogs, after bilateral exclusion of the pylorus and end-to-end gastro-enterostomy with the duodenal stump (Billroth I), were examined from three to four months after the operation. They presented no pathologic findings whereas one dog with gastrojejunal anastomosis (Billroth II) developed a typical, penetrating jejunal ulcer. Peptic ulcer is not always due to a single cause, there is usually a complex condition back of it. Peptic jejunal ulcers in man are, of course, usually associated with a disposition to ulcer, as the primary operation was performed generally on account of ulcer. In animals this predisposition has to be artificially produced. In seven dogs he severed both splanchnic nerves and later he supplemented this with bilateral exclusion of the pylorus. All seven dogs survived the operation several months, and all developed typical callosities, and, for the most part, deeply penetrating ulcers. The two dogs with gastrojejunal anastomosis developed peptic jejunal ulcers opposite the gastric opening, while the five dogs with gastroduodenal union (Billroth I) presented ulcers of the duodenum from 1 to 2 cm back of the suture and corresponding to the lesser curvature. As practical conclusions, Koennecke recommends avoidance of exclusion of the pylorus in any form in persons predisposed to ulcer formation, as far as possible resection for ulcer of the pylorus or duodenum, in inoperable duodenal ulcer, resection of the pyloric region, followed by the Billroth II operation (oral gastro-enterostomy) and, finally, gastro-enterostomy for ulcer only exceptionally and when there is no pyloric or duodenal stenosis.

Recurrence of a Gastric Ulcer Following Use of Silk in Suturing the Mucosa—Wiedhopf reports a case of recurrence of a gastric ulcer and concludes that the findings at the operation furnish further proof for the contention that silk is not so well adapted as resorbable catgut for suturing the mucosa in gastro-intestinal operations.

Local Recurrences Following Operations on Cancer of the Breast—Czirer points out that the ordinary skin incisions used at present in operations for cancer of the breast, in part cross the lymph paths, and in part run parallel with them but they are all alike in one respect. In every incision the knife penetrates deeply the dangerous portion of the skin. Czirer's method which he describes in detail consists essentially in keeping as far away as possible from the strip of skin under which the superficial and deep lying lymph vessels pass from the mammary gland to the axilla. He argues that it is along these particular lymph vessels that metastasis is likely to occur. The lateral free border of the pectoral muscle also looks suspicious to him, and he endeavors not to get too near to its subcutaneous tissue.

A Critical Discussion of Testis Transplantation—Hammesfahr reports the case of a man, aged 26, whose left testis had atrophied from unknown cause, eight years previously, so that only a hard body of connective tissue, the size of a peppercorn, was left. Six years after the left testis had atrophied the patient injured the right testis by a blow with a hammer whereupon also this testis atrophied in spite of all attempts to conserve it. Libido and interest in his work gradually decreased. By splitting the atrophied testis and embedding it in the abdominal musculature, Hammesfahr sought to save part of the function but histologic examination showed that there were no elements capable of functioning left—neither seminal tubules nor interstitial cells. He therefore transplanted half of a testis from a patient who had suffered a gunshot wound, and embedded it in the abdominal musculature in accordance with Lichtenstem's method. Ten days later he noted over the transplant a slight swelling which, in a few days became soft. On opening the swelling he found the whole upper portion of the testis soft and necrotic. At the base he discovered a thin (3 mm) layer of the transplant firmly adherent to the underlying tissue and plainly vascularized. Hammesfahr is almost certain that no appreciable portions of the testis implant became incorporated with the surrounding tissues, but that the adherent vascularized distal was also resorbed later. It was therefore all the more remarkable that within a few weeks, libido became normal and had persisted at last accounts. It is hypoth-

tically possible that the testicular tissue, though soon resorbed, exerted a stimulating effect on certain vicariously functioning endocrine glands, and that these glands, thus stimulated and metamorphosed as it were brought about the remarkable change. It is also possible that the result was due wholly to suggestion. Moreover, in judging the results of transplantation in man we must not lose sight of the fact that sex function depends on purely psychic, imponderable factors to a greater extent than any other function of the human organism. Also it must be remembered that we possess no definitely established, general normal measure by which to estimate such functioning. Hammesfahr does not wish to seem to oppose the idea of homoplastic transplantation of a testis but urges the application of strict criticism to the results by the serologic control methods proposed by Stocker.

Röntgen Irradiation in Treatment of Salivary Fistula—Kaess reports two cases in which he found that roentgen irradiation of the parotid gland by temporarily suppressing gland function was decidedly efficacious in the treatment of salivary fistula. The patients were dismissed cured in from seventeen to thirty days. Kaess holds that roentgen irradiation deserves a special place among the numerous methods employed in the treatment of salivary fistula and is to be recommended not only in stubborn cases in which as a rule only extirpation of the gland would be considered but also as an adjunct in every operative method of treatment. It is conservative and simple.

Primary Closure in Strumectomy—Orth states that not until the past year did he decide to dispense with drainage and resort to primary wound closure in resections. He is well pleased with the results. Lack of care in the operative procedure may be the reason why former attempts at primary suture did not turn out well and that on the second or third day, and often, on account of hemorrhage the same day as the operation, the wound had to be reopened and drained. Thus, it would seem that primary wound closure depends on three things: punctilious asepsis, cervical anesthesia and hemostasis. Cervical anesthesia, as distinct from infiltration anesthesia, is an aid to primary wound closure as it does not affect the subcutaneous cellular tissue. Orth ligates the four main arteries at resection and in only two instances has transient tetany developed. It yielded readily to thyroid treatment. If he ligates only the two superior and not the two inferior arteries, he finds that in spite of ligation of the bleeding vessels in the resected area hemorrhages usually occur, or, at least, hematomas develop which cause the sutures to open or, if this does not occur the trachea may be compressed. Orth holds therefore that, in spite of the slight danger of tetany, the four main arteries should be ligated since as a rule, vascularization in the resected stumps is assured by the retroglangular anastomoses. The two cases of tetany may have been caused by a temporary injury of the parathyroid glands, or the patients may have had a disposition to tetany.

Zentralblatt für Gynakologie, Leipzig

Dec 30 1922 46 No 52

Brow Presentation with Transverse Frontal Suture Hemlein—p 2065
*Inoperable Carcinoma of the Cervix Uteri P W Siegel—p 2067

Irradiation of Inoperable Carcinoma of the Cervix Uteri—Siegel reports the results of roentgen and radium irradiation in 65 cases of carcinoma of the cervix, the interval since five years or more. Of these 65 cases 29 according to Doderlein's classification were operable 20 were inoperable 14 were borderline and 2 were practically hopeless. Of the 29 operable cases, 27 were operated on and 8 patients (30 per cent) were still living at the end of five years. In 2 of the 29 operable cases irradiation was employed. One of these patients still survives. Of the 14 borderline cases 10 were operated on and 3 (30 per cent) survived after five years. Four were given irradiation and none survived the five year period. Of the 20 inoperable cases 3 (15 per cent) survive after five years. In the 2 hopeless cases death ensued. Irradiation of inoperable carcinoma of the cervix uteri aside from the comparatively high percentage of patients surviving after five years, checked the bleeding oozing and the pain

and brought about an endurable state of affairs soon after irradiation was begun. Viewed in this light, irradiation of inoperable carcinoma is a great blessing and should be instituted in every case of inoperable carcinoma.

Zentralblatt für innere Medizin, Leipzig

Dec 23 1922 43 No 51

*Arterial Hypertension E Hartwig—p 825

Arterial Hypertension—Hartwig gives a short review of current opinions and is in favor of the theory that hypertension is primary and the affection of the kidneys secondary. Yohimbin has given good results.

Dec 30 1922 43 No 52

*Control of Puncture of Corpus Callosum G Gabriel—p 841

Control of Puncture of Corpus Callosum by Ventriculography—Gabriel recommends ventriculography to control the persistence of the communication made by the puncture. He was able to prove by this method a communication between the ventricles and the subarachnoid space up to four weeks after puncture of the corpus callosum.

Nederlandsch Tijdschrift v Geneeskunde, Amsterdam

Dec 30 1922 2 No 27

*Colon Disease E H B van Lier—p 3050
Placenta Praevia with Twins H Boshouwers—p 3057
Vaginal Hysterotomy for Abortion H Boshouwers—p 3058

Colon Disease—Van Lier describes a chronic affection of the colon characterized by attacks of pain constipation alternating with diarrhea, and tenderness at numerous points in the colon and pain on pressure and when jarred. The clinical picture resembles that of lead colic so closely that a similar mechanism is probably involved. When a colitis lasts longer than six weeks it probably belongs to this category. He regards it as an incurable affection which we can improve and keep under control by preventing fermentation and the use of drastic purgatives and by regulating the diet and encouraging the patient but our main task is to protect the patient against useless operations. The disturbances are liable to be ascribed to gallstones movable kidney gastric ulcer or ovarian disease. Nearly all these patients had had the appendix removed but without effect on the clinical picture. Van Lier describes a number of cases. One patient consulted a surgeon who diagnosed a tender tumor in the colon and advised operation. The patient then went to an internist who diagnosed spastic contraction and advised medical measures. A second internist diagnosed movable kidney and advised nephropexy—three separate diagnoses in one morning. If the entire length of the colon had been palpated these blunders would have been avoided. In recent months van Lier has saved two patients from cholecystectomy and has seen seven others disappointed by the persistence of symptoms after appendectomy.

Jan 6 1923 1 No 1

*Hemangiomatous Obliteration of Portal Vein J F Hulk—p 4
Delivery of a Thoracopagus J M van Dam and H J van Eldik—p 16
Experiences with Criminal Abortion J A van Dongen—p 24
A Dicephalus Monster E A J M Strater—p 33
Leprosy in Dutch Art G van Rijnberk—p 34
Medieval Regulations in Regard to the Plague in Utrecht A J van der Weyde—p 42
History of an Amsterdam Hospital G Hellinger—p 43
The Social Side of Psychiatry W Beijerman—p 44

Hemangiomatous Obliteration of the Portal Vein—Hulk assumed that volvulus or thrombosis of a mesenteric vessel was responsible for the severe clinical picture and the discoloration of certain loops of the intestine at the exploratory laparotomy. Necropsy revealed that the portal vein was obliterated. The tissues encircling the vein had become transformed into a tumor like porous mass with a network of fine vessels and extensive collateral venous circulation. Twelve analogous cases have been published and various causal factors have been incriminated. He adds that no such formation of porous tissue has ever been encountered around any other vessel.

A good explanation of them are

Biblical scene, in a Dutch setting, of Lazarus at the gate of the rich man, but one depicts a merry-making of beggars, sham cripples in the yard of the "Lazarusclep." Another shows the annual parade of the lepers at Amsterdam

Jan 13, 1923 1, No 2

- *Syphilitic Central Deafness J H Roorda Smit—p 130
- *Strangulation of Fetus by Umbilical Cord G C Nijhoff—p 142
- *Active Immunization Against Diphtheria Cornelia de Lange and J C Schippers—p 145
- *Blue Sclerotics and Brittle Bones H L Straat—p 151
- Murder of Infant by Decapitation J P L Hulst—p 153
- Uniformity in Social Medical Legislation W Schuurmans Stekhoven—p 171

Syphilitic Disease of the Brain Centers for Hearing—Smit relates that of his 17 patients in this category, only 3 had consulted him on account of deafness. In 8 cases the deafness was bilateral. In all the other cases the deafness was first revealed by the examination. One patient had been deaf on the left side for twenty-two years and for seven years on the right side. He recovered his hearing under specific treatment. The diagnosis in this case had been meningitis, and no one had thought of syphilis. The prognosis is graver when the deafness appears during a stormy onset and course of the syphilis, than when it is a late manifestation, or when the syphilis is of the inherited type. Smit says that mercury answers all purposes, arsenicals are not needed, and are liable to aggravate the neurosyphilis. In the cases of inherited syphilis, in 4 the deafness developed at puberty. Another developed at the age of 21 in connection with keratitis. One patient who had been deaf for thirty-five years regained his hearing. The syphilis had been acquired only in one of the 5 cases in this group. The almost complete recovery shows that the auditory nerves had not degenerated, notwithstanding the long blocking of the auditory centers by the syphilis.

Strangulation of Fetus by Umbilical Cord—The cord was twisted around the neck two three or four times in the three cases illustrated. In another case the murmur could be heard and the thrill felt in the umbilical cord although, when the child was extracted, the cord was wound around the neck four times, and the child was resuscitated.

Active Immunization Against Diphtheria—De Lange and Schippers' experience with thirty-two cases has confirmed the reliability of the Schick reaction and of the toxin-antitoxin method of prophylaxis.

Blue Sclerotics and Fragile Bones—In the cases described by Straat the clinical picture included otosclerosis. The grandfather and two of his four children had presented the whole triad. Three of the five members of the third generation present the blue sclerotics and easily fractured bones, but otosclerosis is not apparent as yet, all are under 11 years old.

Jan 20 1923 1 No 3

- *Mongoloid Idiocy L Bolk—p 226
- Mortality in Different Parts of the Netherlands Ouweland—p 235
- *Paralysis from Occult Spina Bifida E Hoelen—p 252
- *Obstetric Examination J H Van Blommestein—p 259
- *Physical Properties of Blood Serum I Koopman—p 264
- Stomach Colon Fistula with Cancer D A de Groot—p 275
- Delivery with Unsuspected Pregnancy K A Rombach—p 276
- Pyometra After Radiotherapy of Inoperable Cancer Lammers—p 278

Mongoloid Idiocy—Bolk explains the mongolian aspect of the eyes as the result of arrested development of the epicanthus. This arrest of development may extend to the brain. He argues further that the "hormone index" is peculiar to each individual and that the hormone index in mongoloid idiots must differ from normal in some essential way. There must be some special irritating or inhibiting element. Biochemical research may reveal the nature of this element.

Paralysis from Occult Spina Bifida—Hoelen reports a case which teaches that search should be made for spina bifida when neurologic disturbances develop in the legs during the period of puberty. The first symptoms had been bilateral paralysis of the peroneus muscle with signs of degeneration and atrophy, slight dissociated sensory derangement and exaggeration of the reflexes in the foot. The spinal fluid had a normal cell count with very high albumin content. There was no depression of the skin but the roentgen rays revealed occult spina bifida in the first sacral vertebra. A

mass of fat and connective tissue protruded into the spinal canal through the gap in the spine. The arch of this vertebra and of the one above were resected, and the soft-part mass, adherent to the dura, was removed. All the nervous symptoms subsided thereafter, and by the end of the year the feet had returned to normal shape. The young man can walk for three hours without a trace of fatigue. This is the only instance of bilateral peroneus paralysis from this cause of which Hoelen can find records. There were no trophic disturbances in this case, but slight vasomotor derangement was manifest.

Obstetric Examination by the Rectum—Blommestein declares that of the thirteen points we seek to determine by internal examination, eight can be determined through the rectum, as well as through the vagina. In Hermann's recent analysis of 720 obstetric cases, a temperature of 38.1 C was recorded in 20.6 per cent of those examined by the vagina and in 6.8 per cent of those examined by the rectum alone.

Certain Physical Properties of the Blood Serum—Koopman compares the findings in 800 serums examined for the temperature at which the serum coagulated when slowly heated. In the healthy, this occurred between 73.2 and 74.6 C. In 42 cases of nephritis, the findings were within normal range in all but 14, in these the coagulation did not occur until the temperature had reached 77.9, 83.9 or 90.4, or intermediate points. The blood pressure ranged from 120 to 220, and all had albuminuria and tube-casts. In 12 cases of pernicious anemia, 9 had normal coagulating and refractometer findings. In 3 the coagulating point was 80, 83.6 and 85.7, while the refractometer index was abnormally low. In all of 33 cases of ordinary anemia and some of leukemia, the coagulation point was normal, as also in his cases of heart disease. But in jaundice the coagulation point was high. This suggests that in pernicious anemia a rise in the coagulation point may be due to the bile pigment in the serum. A higher coagulating point renders the prognosis graver.

Norsk Magazin for Lægevidenskaben, Christiania

January 1923 84, No 1

- *Pathology of Tissues of Ectodermal Origin J Henriks and P Henriksen—p 1
- *Pemphigus of the Conjunctiva E Trumpy—p 27
- *Tumor in Cerebellopontile Angle I Lossus—p 32
- *The Fat Soluble Vitamin A F Poulsson—p 35
- Pathogenesis of Pernicious Anemia P F Holst—p 50

Disease of Ectodermal Origin—Henriks has continued his research on families presenting a combination of mental disease and skin disease. He here describes a new instance which sustains his conception that some primary anomaly in the ectoderm is responsible for this coincidence of hereditary disease of the nervous system (imbecility, von Recklinghausen's disease and ichthyosis), of the organs of sense, and of the skin. Henriksen presents microscopic evidence of degeneration of nerve fibers in such cases, and urges search for the defects in internal secretion which are probably the primary factor. Carrel's method of artificial activation may aid in this line.

Pemphigus of the Conjunctiva—The pemphigus involved the conjunctiva at its first onset in one of the two cases described. The other patient had had recurring pemphigoid blisters in the mouth and throat for three years before the eyes were affected. No benefit was derived in either case from arsenic internally and local applications.

Tumor in Cerebellopontile Angle—The symptoms were typical except that the optic disks seemed to be normal. The tumor was removed at one sitting. The man aged 60, died soon afterward.

The Fat-Soluble Vitamin A in Indirect Infant Feeding—Poulsson concludes from his research that cod liver oil contains 200 or 300 times as much of the fat-soluble vitamin A as butter. He emphasizes the necessity for giving minute doses of cod liver oil to women nursing children that do not seem to be thriving. In a case described the infant's growth seemed to be arrested at the age of 6 weeks. Then the mother began to take a tablespoonful of cod liver oil, three times a day, and the infant immediately began to thrive. The woman's milk had always had normal fat content.

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CHARACTERIZATION OF VARIOUS FORMS OF ENDOCARDITIS*

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According to the studies that we have made, cases of endocarditis can for the present be best classed as rheumatic, syphilitic, acute bacterial, subacute bacterial, and indeterminate

The cause of rheumatic fever has not yet been discovered. There exists, however, a lesion specific for the disease, the Aschoff body. It is to be remembered that this is a perivascular lesion, in contradistinction to the lesion later to be noted as occurring in cases of subacute bacterial endocarditis. In rheumatic fever, a secondary infection by anhemolytic streptococci was found by Kinsella and Swift in 83 per cent of the cases studied by them. At the postmortem examinations, cultures yielded the organisms in 50 per cent of the cases. They found no immunologic reactions present for these cocci, whereas in cases of subacute streptococcus endocarditis they observed, as we did, that a complement fixation test is uniformly present when the serum of the patient is tested against the homologous organism. Rheumatic fever may occur in acute, subacute or recurrent form. It is the most frequent cause of valvular defects.

Syphilitic disease of the valves of the heart is known to us practically only as an end-product. It is very likely that it occurs in at least acute and recurrent forms. It is important to make studies in this direction.

BACTERIAL GROUPS

The groups called bacterial are so designated because they are due to known bacteria. When the cause of rheumatic fever is discovered, a better nomenclature can be introduced. The cases of bacterial endocarditis that run an acute course are due most commonly to hemolytic streptococci, pneumococci, staphylococci and the gonococcus, but can also be caused by a great variety of other organisms. The acute bacterial endocarditides occur much less frequently than infections running a subacute course. Cases lasting for six weeks are usually classed as subacute. The acute cases were formerly called "acute malignant endocarditis." The subacute cases are due in about 95 per cent of the cases to anhemolytic streptococci (the so-called *Streptococcus viridans*). The remaining cases are nearly all caused by the so-called *Bacillus influenzae*.

Other organisms, especially the gonococcus, can cause an infection giving a subacute picture, while on the other hand, the organisms found in the subacute cases may, rarely, originate an infection of short duration. These subacute cases have been designated by a variety of names, the most frequently employed being chronic septic endocarditis, septic rheumatic endocarditis, chronic infectious endocarditis, chronic malignant endocarditis and endocarditis lenta. It is best to designate the bacterial cases according to the course of the disease and the infecting organism. As the subacute cases are almost entirely due to anhemolytic streptococci and the influenza bacillus, they are best designated as subacute anhemolytic streptococcus endocarditis or subacute *Bacillus influenzae* endocarditis. For brevity, one can call the streptococcus cases subacute streptococcus endocarditis, because we know that the hemolytic streptococci practically never are the cause of a case of endocarditis of subacute type. I myself have seen no such cases.

THE INDETERMINATE GROUP

What we designate as the indeterminate group consists essentially of two types of cases: (1) an atypical form of verrucous endocarditis, and (2) those cases usually described as terminal.

To explain what we mean by the atypical variety, it is necessary to revert to the subject of rheumatic fever. We have stated that the Aschoff body is the characteristic lesion of this disease, and, for scientific purposes, only those cases in which this lesion is found can definitely be designated as rheumatic. In our studies of hearts from cases clinically recognized as cases of rheumatic fever, and exhibiting at postmortem examination the typical verrucous lesions, only eighteen out of fifty-six cases exhibited Aschoff bodies. A study of the clinical histories of the other thirty-eight cases makes it clear that many of them at least are cases of true rheumatic fever. It is evident, therefore, that not all cases of rheumatic fever are accompanied by the specific lesion. At the same time, we cannot state that all of the cases not showing the bodies are cases of rheumatic fever. Possibly some belong in the indeterminate group which I shall now discuss.

Besides those cases that present the clinical picture of rheumatic fever and the typical verrucous lesions on the valves, but not Aschoff bodies, there exists a group of cases presenting more or less the clinical picture of rheumatic fever (with perhaps a greater tendency to the occurrence of purpura and erythema), not showing Aschoff bodies at the postmortem examination and accompanied by lesions that respond to those of rheumatic fever. These lesions are much more extensive than those of rheumatic fever and extend for a

* Read before the Association of American Physicians, May 3, 1922.

* From the medical and pathologic departments, Mount Sinai Hospital.

valves They may show a somewhat crinkled appearance, and in one case, the lesion extended from the mitral valve for a considerable distance over the mural endocardium of the left ventricle The mural endocardium may be involved at a distance far away from the valves Bacteria have thus far not been found in the vegetations of this group It is possible that some of them represent unusual types of vegetations of rheumatic origin¹ There are no so-called Bracht-Waechter bodies in the myocardium in these cases

The other type of what we for the present designate as the indeterminate group of cases is represented by what has usually been described as terminal endocarditis This is a form of endocarditis that occurs without recognized symptoms at the end of a chronic and debilitating disease It has been found most frequently in such conditions as diabetes, gout, nephritis, neoplasms, old lesions of the nervous system, and exophthalmic goiter We have been surprised by the frequency of its occurrence in cases of leukemia, acute or chronic The lesions are small verrucae, and in the heart muscle and kidneys there are no known characteristic changes These cases need renewed investigation It may very well be found that some, at least, of these endocarditides are instances of a terminating and not of a terminal disease I drew attention to the importance of this distinction, a number of years ago It has been thought by some that the lesions in these cases may be toxic in origin It is just as likely, or more likely, that they are definite infections In cases of chronic valvular disease of rheumatic origin, such an endocarditis may be found The question then arises whether or not we are possibly dealing with a terminal endocarditis of rheumatic origin, without the presence of Aschoff bodies The fact that symptoms are not present does not constitute an argument against a possible rheumatic origin of the lesion, because we have seen cases of acute rheumatic endocarditis occur in the absence of all recognizable clinical symptoms In cases of subacute bacterial endocarditis in the bacteria-free stage (which I shall shortly define), a so-called terminal endocarditis has been found by us Recently we have found that a true rheumatic endocarditis may occur as a terminal infection in the course of other diseases

Little is known as regards the inflammatory changes in the valves in cases of exanthematous and other specific fevers, except, of course, the occurrence of acute bacterial endocarditis In patients who had suffered some time before from scarlet fever, we have found an undescribed lesion of the mitral valve This I shall discuss at another time Tuberculosis of the endocardium is a very rare disease Atherosclerosis is not an inflammatory process, but it plays a great role in the production of valvular defects Its importance in causing disease of the mitral valve has not been sufficiently understood Besides typical atherosclerosis there are a number of other causes of noninfectious thickenings of the valvular and mural endocardium

PATHOLOGIC AND CLINICAL CHARACTERISTICS

It will now be of value to take up briefly some of the pathologic and clinical characteristics of these varieties of endocarditis It will be possible to discuss only some of them The syphilitic and indeterminate cases will be only casually brought in for discussion, because our

knowledge of them is in a great many respects, very deficient

The first question that arises is in regard to the significance of the presence of a previous valvular disease Valvular defects are caused by rheumatic fever, atherosclerosis, syphilis, congenital disease, traumatism, and rarely by a bacterial endocarditis that has ended in recovery from the infection Rheumatic fever and syphilis readily attack healthy valves Acute bacterial endocarditis usually attacks a valve that is the seat of a previously existing valvular defect Subacute bacterial endocarditis occurs almost always on the basis of a previously damaged valve It involves most frequently valves previously affected by rheumatic fever, less often syphilitic valves, and, still less often, valves affected by atherosclerosis Acute bacterial endocarditis is not at all an infrequent occurrence in connection with all kinds of congenital cardiac defects The congenital lesion that we have most often found involved in cases of subacute endocarditis is the open ductus arteriosus This may very well be so because this is the congenital lesion most often found in adult life The indeterminate cases of endocarditis may occur in the entire absence of previous valvular disease

The portals of infection in syphilis are well known In rheumatic fever, knowledge in this respect is lacking The tonsils appear in some instances to be the seat of the virus, but it has not been proved that they represent the only or the main portal of entry The origin of acute bacterial endocarditis is usually found in an evident purulent focus In the subacute cases, the invasion usually originates in what, following Billings and Rosenow, we call focal infections It is possible that the disease may be initiated by organisms in the intestinal tract

A study of the extensive material at our disposal (made with the valuable assistance of Dr Benjamin Sacks) shows that in fatal proved cases of rheumatic fever the tricuspid valve was involved in twelve of eighteen cases, or more than 66 per cent Taking all the cases classed clinically as rheumatic and showing typical vegetations at the postmortem examination, but without Aschoff bodies, we find fifty-six cases, thirty-one of which, or 55 per cent, were accompanied by vegetations on the tricuspid valves This was not surprising, because I had for many years drawn attention to the high incidence of more or less marked stenoses and organic insufficiencies of that valve Syphilis, as is well known, has an affinity for the aortic valve Nothing definite is known as to the involvement of the mitral valve In cases of acute bacterial endocarditis, the right side of the heart (tricuspid or pulmonary valves or both) was found involved in fifteen out of fifty-six cases, or 26.8 per cent The mitral valve was affected more often than the aortic, the same holding true of cases of subacute bacterial endocarditis In cases of the latter disease, the right side of the heart was involved once (tricuspid) in more than 100 hearts, and the lesion was slight The atypical cases involve the right side of the heart frequently, in one instance the pulmonary valve being affected This valve was not found affected in any definitely proved case of rheumatic fever Terminal endocarditis appears to be a disease of the left side of the heart, the mitral valve being the usual seat of the disease

As regards the type of gross lesion found, in rheumatic endocarditis it is a small verrucous lesion which undergoes scarring and leads to stenoses and insufficiencies In acute bacterial endocarditis, one finds

¹ In one case studied within the last year an opportunity was afforded to follow the entire clinical course The clinical picture was different from that of rheumatic fever and of subacute bacterial endocarditis.

fibrinous deposits, ulceration, and abscesses of, and perforations through, the walls. In subacute cases the lesion may be small or massive, but even when small is practically always larger than the lesion found in cases of rheumatic fever. There is little tendency to ulceration, and, if ulceration does occur, it is usually in the aortic flaps. The disease occurs much more frequently on the mitral than on the aortic valve. There is then frequent involvement of the wall of the auricle and of the chordae tendineae. Healing often occurs, with resulting fibrous tissue, with or without calcareous impregnation. In the cases of terminal endocarditis, the lesion consists of verrucae usually quite small.

MICROSCOPIC APPEARANCE

The statements made here concerning the microscopic appearance of the various types of lesions are based on studies made by Dr George Baehr, who will later report on them in full. In rheumatic endocarditis, the verrucae in a given attack all appear to be of the same age. The first change is a productive inflammation over which the endothelial cells swell and desquamate. The denuded areas are covered by agglutinated blood platelets. The adjacent endothelium rapidly proliferates, covering the surface of the blood platelet nodule and thus limiting its size. This is the typical verruca. Later, the nodule becomes organized and thereby flattened, and a ridge-like scar is found along the closure line. In the atypical cases of the indeterminate group and in the terminal cases, the lesion is essentially the same as it is in the rheumatic cases. What differences do exist will be described at a later time. In acute bacterial endocarditis, we find a purulent infiltration over a very much wider area, with resulting necrosis and ulceration. A large blood platelet mass results, the so-called vegetation. It is invaded by polymorphonuclear leukocytes and by such large numbers of organisms that there is a veritable row of colonies on the surface. Endothelium does not cover the mass. Organization occurs in the deep layers of the vegetations in patients who do not die within the first few weeks. In cases of subacute streptococcus and *Bacillus influenzae* endocarditis, the primary lesion, though small, is larger than it is in rheumatic fever. There is no purulent inflammation, but a productive process with a tendency to round cell infiltration. The process spreads by continuity. The blood platelet mass that is formed is invaded by such large numbers of bacteria as to form definite rows of colonies, especially near the surface of the mass. The vegetations contain few polymorphonuclear leukocytes. In a number of cases, giant cells are found, apparently of the foreign body type. When present, they constitute a characteristic lesion of this type of endocarditis. Phagocytic cocci are often demonstrable in them. The freshly formed portions of the vegetations consist almost entirely of bacteria. The endothelium of the adjacent endocardium is inhibited to a great extent from spreading over the surface of the mass because of the presence of the colonies of bacteria. In the deeper and older portions, the bacteria tend to disappear, and here an active fibroblastic invasion is always to be seen, and, when healing occurs, dense connective tissue with and without lime has formed.

Whatever lesions are found in the heart muscle in cases of acute bacterial endocarditis consist in the main of polymorphonuclear leukocytes. In cases of subacute bacterial endocarditis, one finds an essentially round cell interstitial lesion, the so-called Bracht-Waechter body. These lesions are not present in all cases, and are not specific. In rheumatic fever, as stated above

Aschoff bodies may be present. In syphilis, as is well known, syphilitic lesions of smaller or larger extent may occur in the myocardium.

OTHER FINDINGS

Pericarditis of various types, including the purulent type, occurs in the cases of acute bacterial endocarditis. In rheumatic fever, pericarditis is very frequent, a purulent effusion never being found. It is also found in atypical verrucous endocarditis of the indeterminate group. We have observed one case in which there was a recent pericarditis accompanied by Aschoff bodies in the heart muscle, but not by any lesions of the valves. In subacute endocarditis, pericarditis is not part of the clinical picture. It might very well occur as the result of the presence of pneumonia or some other complication, or it might represent a mixed infection with rheumatic fever.

Embolic lesions occur with great frequency in the acute and subacute bacterial cases. They consist of petechiae, Janeway lesions, Osler (tender cutaneous) nodes, gross embolisms in the vessels, embolic aneurysms and purpura. The last named condition, as well as petechiae, particularly white-centered ones, can, of course, occur without being embolic in nature. Embolic lesions in cases of rheumatic fever or valvular disease are due to secondary thromboses and not to the valve lesion as such. Such emboli never produce tender nodes or embolic aneurysms. The Osler node occurs only in the subacute cases. Subcutaneous fibroid nodules are found only in the rheumatic cases. The Janeway lesions occur almost exclusively in the cases of acute bacterial endocarditis.² In connection with subacute bacterial endocarditis, I have seen them only three times, and in all these three instances they were quite small. In these cases there were associated small oval areas of erythema scattered over a smaller or larger part of the surface of the skin of the body—a type of eruption that we have never seen in cases of acute bacterial endocarditis. Typical erythema nodosum is not found in cases of acute or subacute bacterial endocarditis, but can occur in cases of definite rheumatic fever. Erythema multiforme in its typical form occurs only in the rheumatic cases and in the atypical cases of the indeterminate group. Atypical erythematous lesions are seen in cases of acute and subacute bacterial endocarditis. Petechiae occur frequently in cases of acute and subacute bacterial endocarditis. When they occur in rheumatic fever, it is only as part of a purpuric eruption. Petechiae having white centers occur in the acute and subacute cases, but more often in the latter. Those with elevated white centers are found only in the acute cases, and then usually indicate a general staphylococcus infection.³

Purpura occurs in cases of rheumatic fever and in the atypical cases of endocarditis, but is then not due to embolism. In cases of acute and subacute bacterial endocarditis, the purpura that occurs may be either embolic or not embolic in origin.

In the eyes we find lesions in both the rheumatic and the bacterial cases. The uveal tract may be involved in cases of acute bacterial endocarditis. The lesion is

² These lesions were described many years ago by Edward G. Janeway as small hemorrhage in the palms and soles with slightly nodular character. In contradistinction to the Osler nodes the lesions are not tender. The lesions are of such great value for diagnosis that we have thought it proper that they should have a special designation and that this designation should carry the name of the eminent clinician who emphasized the importance of them for diagnostic purposes. We have found that some of these lesions may be rather erythematous in character.

³ Petechiae with elevated white centers or el occur in general infections which are not a cutaneous infection. They occur most frequently in cases of

usually a severe one, often terminating in panophthalmitis. In the subacute bacterial cases, no such lesions have been found by us. In fact, we have not seen any cases in which the uveal tract was involved in even a mild way in cases of the subacute type. This is rather remarkable because the same focal infections that cause endocarditis are known not infrequently to produce disease of the iris, ciliary body and choroid coat of the eye. In one case the patient suffered from a choroiditis due to ethmoiditis, and soon afterward developed a subacute streptococcus endocarditis, apparently of tonsillar origin. The choroiditis did not recur. In rheumatic fever, uveal involvement occurs, but such a complication is very unusual. The literature on this subject is quite misleading. Apparently, cases of disease of the uveal tract due to the bacteria present in focal infections have been wrongly classed as rheumatic. Optic neuritis occurs in the various types of bacterial endocarditis. It is much more frequent in cases of subacute streptococcus endocarditis than has usually been realized. Optic atrophy may result. Besides hemorrhages in the retina, certain white spots, which were first described by von Roth and which are often termed Roth's spots, are found. They seem to occur much more frequently in the acute than in the subacute type of cases.

In cases of rheumatic fever, acute bacterial endocarditis and atypical verrucous endocarditis, the skin over the joints may be red. In the subacute cases one practically never sees this condition. When it occurs, one must think of the possibility of a mixed infection with rheumatic fever being present. Pus is found in the joints only in cases of acute bacterial endocarditis.

The study of the kidneys has given most interesting results. In acute bacterial endocarditis, besides infarcts, one may find purulent lesions. In the cases of rheumatic fever in which Aschoff bodies were present, there were not found any instances of diffuse glomerular nephritis. In the cases classified as rheumatic and in which Aschoff bodies were not found, glomerular nephritis was found three times. In subacute streptococcus endocarditis, besides infarcts, there occurred the embolic glomerular lesions which were first described by Löhlein and fully studied by Baehr. These lesions occur in no other form of endocarditis, and very rarely in other conditions.⁴ The embolic lesions occurred in all but two of sixty-eight cases studied by Dr. Baehr. They were found to be less abundantly present in cases in the bacteria-free stage. Diffuse glomerular nephritis occurs more than fifteen times as frequently in the bacteria-free stage of subacute streptococcus endocarditis as in the bacterial stage. When found in the bacterial stage it is acute in type, whereas in the cases in the bacteria-free stage, it presents the appearance of a subacute or chronic diffuse glomerular nephritis. In one case of rheumatic fever (Aschoff bodies present), necroses were found in the renal cortex and also in the heart muscle, which were due to a proliferative lesion in the endothelium of the arteries. A study on this subject will be reported later by Drs. Baehr and Sacks. In the cases of subacute bacterial endocarditis due to the influenza bacillus (seven cases), we have thus far found no embolic glomerular lesions. We do not yet know whether this observation has any significance. The Osler nodes were found in some of these cases. Diffuse glomerular nephritis was found in one case in the bacterial stage.

⁴ We have found them in one case of actinomycosis and in a case the exact nature of which was never cleared up and which at the post mortem examination presented an adherent pericardium and focal necroses in the liver.

CONDITIONS IN WHICH ANHEMOLYTIC STREPTOCOCCI HAVE BEEN FOUND

It is important to remember that anhemolytic streptococci may be found in the blood of patients suffering from conditions other than endocarditis. Otherwise, one would make the error of concluding, from a report that such streptococci had been found in the blood of a patient, that an endocarditis was present. They have been found in

1 Cases of subacute streptococcus endocarditis

2 Cases of rheumatic fever and of chorea. As stated earlier in this communication, under these conditions they are believed to be secondary invaders. The cocci found in such cases differ in certain morphologic and cultural characteristics from those found in cases of subacute bacterial endocarditis.

3 Cases of combined rheumatic endocarditis and subacute streptococcus endocarditis, their presence being due to the second named condition. I shall at another time describe such a case.

4 As an invasion from active or quiescent focal infections, especially the tonsils.

5 As an invasion from acute inflammatory processes in various parts of the body, as, for instance, thrombosis of the lateral sinus, postpartum infections, and phlegmons.

6 As a secondary or terminal invader in a variety of diseases. In cases of verrucous endocarditis of the rheumatic or terminal type, Reye recovered anhemolytic streptococci regularly from the crushed vegetations. In sections they were found only with great difficulty.

7 Fatal cases of valvular defect or subacute *Bacillus influenzae* endocarditis, as a secondary infection.

8 A curious group of cases,⁵ described by Oille, Graham and Dettweiler, characterized by subfebrile temperature elevations and the presence of anhemolytic streptococci in the blood. The patients, of whom there were twenty-three, all recovered. Because embolic features were not present and because there was otherwise no absolute evidence of organic change in any of the valves, one cannot be sure that the endocardium was involved. Nevertheless, one must admit that in at least some of these cases an infection of the endocardium took place. Herrick and Warren reported a small group of cases in which there occurred a general infection by an hemolytic streptococci, with recovery. Some of these were found in the course of a valvular defect. Here also one cannot be sure whether or how often the valves were involved.

MIXED TYPES

Mixed types of valvular affections and mixed infections of various kinds come under observation. The combination of valvular disease and endocarditis have been mentioned. Some of these are

1 Atherosclerosis and syphilis, either being the primary lesion. The combination of valvular disease and bacterial endocarditis is common knowledge. Atherosclerosis and atherosclerotic processes are often added to valvular disease of rheumatic origin. How often the rheumatic virus attacks a valve that has previously been the seat of atherosclerosis, we do not know.

2 Rheumatic fever and subacute streptococcus endocarditis. We observed one case in which the bacteriologic and pathologic studies proved definitely that the two diseases were present at the same time, the lesion of rheumatic endocarditis being present near the free border of the mitral valve, and the lesion of the subacute streptococcus endocarditis, much larger in size, being present on the ventricular aspect of the aortic flap of the mitral valve. In a second case there were found the healing lesions of subacute endocarditis of the valves and fresh Aschoff bodies in the heart muscle.

3 Valvular defect and verrucous (terminal) endocarditis

⁵ A group of eighteen similar cases has recently been reported mainly from the bacteriologic side by Salus.

4 In cases of subacute streptococcus endocarditis, secondary infections by pneumococci are occasionally found, the latter being then generally due to the presence of a pneumonia. In endocarditis in the bacteria-free stage, a secondary infection by an anhemolytic streptococcus has been found once in a case of healing *Bacillus influenzae* endocarditis, and in another case of healing streptococcus endocarditis there were some superficial lesions due to a secondary infection by *Staphylococcus aureus*. In the latter case there were present purulent foci in the heart muscle, in which staphylococci were demonstrated in sections.

COURSE

It will now be of interest to discuss, even if briefly, the course of the various types of endocarditis. The outcome of the syphilitic cases in the form of aortic insufficiency is known to us, but little has been learned concerning the history of the active stage of the infection. The general course of rheumatic endocarditis has been much but not sufficiently well studied. It is necessary to carry on renewed investigation concerning the life history of the disease and of the lesions. It is of interest to note that death may occur in the first attack of rheumatic endocarditis. We have definite pathologic evidence on this point.

In the last twelve years we have learned much that is new concerning the course and outcome of cases of subacute bacterial endocarditis. In the discussion of this subject it is necessary to distinguish cases in the bacterial and the bacteria-free stages. The case is surely in the bacterial stage if the blood culture is positive, but it may be in the bacterial stage, and yet the blood culture may be repeatedly found negative. This can be determined by clinical criteria, but more definitely by the postmortem examination. In cases in the active stage of subacute bacterial endocarditis, the surface of the vegetations consists almost entirely of bacteria. If the organisms are present in small numbers, the case is already going over to the bacteria-free stage. With these facts in mind, we can discuss the cases as they present themselves to us clinically.

CLINICAL OBSERVATIONS

1 *Cases Giving a Positive Blood Culture*—More than 90 per cent of cases in the active stage are found to have bacteria in the blood if proper methods are used. What happens to these patients? Nearly all of them die. When I had completed the study of the first 150 cases I had observed four cases of complete recovery. In these cases there was no proof that the particular method of therapy employed was responsible for the favorable outcome. Since that time I have observed at least two more such cases. The first four patients came under observation, respectively, nine, seven, five and five years ago. The fifth patient was observed during the greater part of the year 1921, and has been free from the infection since January of this year. The sixth patient that recovered has been under observation for several months since the time of recovery. To be sure that a patient has really had the disease, one needs more, as I stated above, than to find that there is present valvular disease and that there are bacteria in the blood. There must be definite clinical symptoms present, such as fever, splenic enlargement, petechiae, tender nodes, embolisms and progressive anemia. There exist cases in which a positive blood culture is found followed by negative blood cultures. These patients usually die within a few months. After the blood is free from bacteria, the patients generally present symptoms like those occurring in the cases to

be described directly, that come under observation for the first time in the so-called bacteria-free stage.

2 *Cases Coming Under Observation with Negative Blood Cultures*—A Some of these cases are in the active stage. Clinically they act like the cases in which the blood cultures are positive, and the necropsy shows vegetations full of bacteria. These cases really belong in Group 1, constituting cases of that type in which we failed to find the bacteria during life.

B This group has the same symptoms as cases in the active stage, but they gradually lose the fever and most of the other symptoms. Most of these patients die while still in the febrile stage. At the necropsy, few or no bacteria are found in the vegetations. They are evidently cases that were recently in the bacterial stage of the disease. Those patients that live after the fever has disappeared present a clinical picture like that presented by patients constituting the next group.

C Here we find a remarkable group of cases in which fever is not a characteristic symptom as it is in the active stage of the disease. Some of these patients have no elevation of temperature during a long period of observation, which may extend over many months. Fever may occur because of complications, anemia or intercurrent diseases. The type of cases belonging to this group, which comes under observation still febrile, with negative blood cultures, and then becomes afebrile, has been described in Group B.

In papers published in 1912 and 1913 and in subsequent communications, I have directed attention to a group of patients who come under observation with a valvular defect and with a variety of symptoms such as embolisms of the various types mentioned above, progressive anemia, splenomegaly, progressive insufficiency of the kidney due to subacute or chronic glomerular nephritis, or a peculiar pigmentation of the face. These cases had generally been considered to be instances of chronic rheumatic endocarditis. From pathologic, bacteriologic and clinical studies, it was definitely shown that such patients must have had a previous endocarditis of the bacterial type, and had not come under observation in the bacterial stage, or had not been recognized as suffering from such a condition. Such cases are designated as cases of subacute bacterial endocarditis that have become spontaneously bacteria-free. The lesions in the heart were of the same type as were found in the cases in which positive blood cultures had been obtained, but showed marked or complete organization with or without calcification. In nearly all the cases the typical embolic glomerular lesions were found, but in a healed stage. They were much less abundantly present than in the cases that showed evidence of active infection. In the few cases in which the embolic glomerular lesions were not found, the patient had presented typical Osler nodes during life, and the cases could therefore be accurately identified.

It is interesting to speculate on the probable great frequency of subacute bacterial infections of the valves of the heart with complete recovery in cases in which there is no history of the active infection. I have shown that cases with positive blood cultures may undergo complete recovery, and have drawn attention to the occurrence of cases coming to us with sequelae of the disease in which there is no history of the active bacterial stage of the disease.

ensued, leaving no evidence behind of a type that we have heretofore recognized

3 *Recurrences*—During the last year we have made the novel observation that recurrences of the disease exist. Thus far four such cases have come under observation

A A case in the bacteria-free stage with fresh lesions due to anhemolytic streptococci. There were very recent and also completely healed embolic glomerular lesions

B A case with positive blood cultures, then a bacteria-free stage with the development of renal insufficiency, and later a return of the fever and bacteremia, and a fatal outcome

C A case with positive blood culture in which there was fever for several months, then a completely afebrile period lasting six months, and a second attack of fever lasting three weeks with a general infection of anhemolytic streptococcus. In the first attack, petechiae were present and the spleen was enlarged. In the second attack, splenic enlargement was present. This patient is being kept under observation

D A case apparently at the end of the active stage of the disease, with fever, white-centered petechiae, enlarged spleen, tender sternum and marked anemia, running a course of a number of weeks, with negative blood cultures. All the symptoms then disappeared, and after ten months the fever returned for three weeks and white-centered petechiae were repeatedly found, and anemia developed under observation. This patient now has no fever and is being further studied

All of these cases could be used as evidence that recurrences of the infection may take place. Further studies in this direction are highly desirable because it is very probable that recurrences of the disease are much more frequent than we had believed possible. The occurrence of mild forms of the disease points in this direction. Reference has been made to the cases described by Oille, Graham and Dettweiler. I am not yet in a position to state how often such mild cases occur, but the studies of the last few years have made me believe that I may have overlooked a number of them

CONCLUSION

It is evident that I have presented the subject of the characterization of the various forms of endocarditis in a very broad way only. It is realized that the various subjects that have been discussed must later be taken up in a more detailed fashion.⁶ One thing is clear. It is evident that the disease which was considered rare, subacute bacterial endocarditis, is now recognized as one of the common diseases. Of great interest is the change in our point of view. It was supposed to be a practically uniformly fatal disease. Now we are observing more and more partial or complete recoveries. We find that very mild cases exist, and that there is a recurrent form of the disease. In other words, the interest is shifted toward the question of healing. It will be of the greatest value if an active campaign is undertaken for the purpose of preventing this as well as other forms of endocarditis

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⁶ References to the older literature will be found in earlier papers. The later literature will be given in subsequent publications

Empiricism and Rationalism in Therapy—Empiricism may be defined as the employment of a remedy of whose actions we are ignorant for a disease whose nature we do not understand. Rational or scientific treatment means on the other hand, the recognition of the symptoms of ill health with a knowledge of their mechanism and prognostic significance, and the employment of a remedy whose action on the sick human body we know and understand.—Sir James Mackenzie, *Brit J Tuberc* 17:15 (Jan) 1923

STUDIES IN FAMILIAL NEUROSYPHILIS

II. FAMILIAL NEUROSYPHILIS FROM VARIOUS EXTRA-FAMILIAL SOURCES. A CLINICAL CONTRIBUTION TO THE QUESTION OF NEUROTROPISM*

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In the first paper of this series,¹ we reviewed the question of conjugal neurosyphilis, and reported examinations of the fifty-two marital partners of fifty neurosyphilitic patients. The results were discussed from the standpoint of their applicability to the hypothetical existence of a strain of *Spirochaeta pallida* having a selective affinity for the central nervous system. Conjugal neurosyphilis was observed in twenty-one, or 52.5 per cent, of the forty partners in whom syphilis could be demonstrated, this incidence being much greater in the partners of paretics and tabetics than in those of cerebrospinal (meningovascular) neurosyphilitics. This variation, together with other facts, led us to conclude that from this type of clinical study alone a definite decision as to duality of strain could not as yet be reached.

To the proponents of neurotropism, the high incidence of conjugal neurosyphilis, both partners having been infected with the same strain of organism, as well as the occasional development of neurosyphilis in several persons infected from a common source, provides a substantial clinical basis for the hypothesis. That a neurotropic strain of organism cannot be the only factor, or necessarily the most important one, in the origin of neurosyphilis is illustrated by the families to be reported in this paper, since several members, each acquiring syphilis from a separate source, all developed neurosyphilis.

REPORT OF CASES

FAMILY 1—Elder brother infected with syphilis in 1914 at 29, lapsing treatment, in 1917, asymptomatic neurosyphilis, 'cure' by adequate treatment, remains well in 1923. Younger brother contracted syphilis in 1910, at 20, in 1920, general paresis.

The elder brother, aged 29, was seen in January, 1914, with primary and secondary syphilis of eight weeks' duration. There was a fairly profuse maculopapular rash, polyadenitis and the scar of the healed chancre. During 1914 and 1915, he received only three doses of arsphenamin. About four months after the onset of the infection, he began to suffer with severe headache, lasting continuously for periods of a week or more, a drowsy feeling and burning sensations over the skin. He disappeared from observation until July, 1917, at which time a spinal puncture was performed. This showed 32 cells, globulin + + +, Wassermann reaction positive with 0.2 cc and a colloidal gold curve reading 4333321000. The blood Wassermann reaction also was positive. Neurologic examination disclosed nothing of importance.

This patient's younger brother was admitted in July, 1920 at the age of 30. In 1910 when 20 years old, he contracted a chancre which was treated with two injections of arsphenamin and was not followed by any secondary symptoms. He had remained well until ten days before admission, when

* From the Syphilis Department of the Medical Clinic the Johns Hopkins Hospital.

This clinical research has been aided by funds from the United States Interdepartmental Social Hygiene Board and the American Social Hygiene Association.

1 Moore, J. E. and Keidel, Albert. Studies in Familial Neurosyphilis I. Conjugal Neurosyphilis. J. A. M. A. 77:1 (July 2) 1921.

The youngest son was infected with syphilis at the age of 20 in 1896. The diagnosis was made by a physician who had treated his brother with mercury.

had a lesion of the right testis and epididymis, diagnosed as tuberculous and removed by castration. The blood Wassermann reaction at this time was negative. This patient was first seen by us in September, 1922. He is said to have been acting peculiarly for some months, and his normal elder brother, knowing that he had had syphilis, persuaded him to submit to examination. This revealed unequal, irregular pupils, reacting sluggishly and slightly to light, the deep arm reflexes were present but the triceps particularly was sluggish, the patellar and ankle reflexes were absent, even on reinforcement, there was a positive Romberg sign. The blood Wassermann reaction was positive, the spinal fluid showed 146 cells, globulin + + + +, Wassermann reaction positive with 0.2 cc of fluid, and a colloidal gold curve reading 5554331000. The clinical diagnosis was taboparesis. The first cousin of these three brothers also contracted syphilis in 1900, when 23 years old. His treatment was similar to that of the others. In 1912 he developed a paranoid psychosis necessitating institutional care. At this time, he showed physically no evidence of neurosyphilis except markedly exaggerated deep reflexes, but a study of his spinal fluid revealed 2 cells, globulin +, Wassermann reaction negative, and a colloidal gold curve of the syphilitic zone type. The diagnosis of asymptomatic neurosyphilis on this evidence is questionable. No details as to the subsequent course are available.

COMMENT

All the affected members of these three families are known to have been infected, not only at widely separated dates, but from different sources, yet in Family 1 two brothers showed evidence of central nervous system syphilis, in Family 2, the father and eldest son, infected at an interval of fifteen years, both developed eighth nerve deafness, and the youngest son asymptomatic neurosyphilis, and in Family 3, three brothers (possibly also a cousin) developed neurosyphilis, two of them taboparesis, one tabes dorsalis. Such an occurrence can best be explained on the basis of familial predisposition.

Reports similar to this are much less frequent in the literature than those dealing with conjugal neurosyphilis. An incomplete search, however, reveals two articles, by Strohmayer² and Burrow.³ The first named reports the development of tabes dorsalis in two sisters with a diabetic and neuropathic ancestry. Burrow's family includes four certain cases of tabes and an additional probable one, among six members of a fraternity, all having acquired syphilis from different sources. The older literature contains many articles dealing with the question of predisposition and the inheritance of a tendency to develop neurosyphilis, a typical example being the paper by Nücke.⁴ In general, however, the older investigators attempted only to show the existence of a familial neuropathic taint. Actual reports of several cases of neurosyphilis (other than congenital neurosyphilis) in a single family are lacking.

It is obvious from this report that the factor of personal, familial or racial predisposition to nervous system damage may, as pointed out by Nichols,⁵ influence the course of events in syphilis. Partly for this reason the clinical data in favor of syphilis as a virus nervous are as yet insufficient to permit of a definite decision. Levaditi and Marie⁶ have attempted to

solve the problem from the experimental standpoint. They inoculated rabbits with a strain of organism said to have been obtained from the blood of a parietic (neurotropic virus), and compared this strain with a strain of spirochete obtained from a chancre (dermotropic virus), they noted wide differences in incubation period and in the macroscopic and microscopic appearance of the lesions. Cross-inoculations with their two strains were possible, and while the dermatropic strain retained its virulence for the human being in spite of years of animal passage, the neurotropic strain was shown to be avirulent for man. These results are open to two grave criticisms: (1) that the differences observed in the two strains are those to be found between any recently isolated strain of spirochete and one which has been carried in the animal for years, or (2) more likely, as is pointed out by Jahnke,⁷ their neurotropic strain probably is *Treponema cuniculi* (*Spirochaeta paralus-cuniculi*) the organism of spontaneous venereal spirochetosis in rabbits.⁸ All of the peculiarities shown by the neurotropic strain of Levaditi and Marie have also been observed with *Treponema cuniculi*. These criticisms must be met by more detailed and careful experimentation before an answer can be reached.

SUMMARY AND CONCLUSIONS

- 1 In three families, of which two contained three members each, and one two members, who all acquired syphilis from different sources and at different dates, all developed neurosyphilis.
 - 2 This occurrence can best be explained on the basis of familial predisposition.
 - 3 The clinical and experimental evidence now available does not settle the question as to the existence of a neurotropic strain of *Spirochaeta pallida*.
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RELATIVE VALUE OF SURGERY AND ROENTGEN RAY IN THE TREATMENT OF HYPERTHYROIDISM *

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Diseases of the thyroid gland are of interest to many branches of the medical profession. Aside from their great importance in clinical medicine, much remains to be learned about them from a physiologic and pathologic point of view. Not only is the thyroid frequently the seat of local changes, but through variation in its activity it exerts a profound effect on the organism as a whole. We may, therefore, logically classify cases of thyroid disease on two different bases: the basis of function and that of pathologic changes in the gland itself. On the first basis we may group them according to the activity of the thyroid, which may be excessive, normal or reduced, and, on the second, according to various histologic changes, of which the chief are hypertrophy and hyperplasia, the deposition of colloid, the presence of adenomas, of malignancy or

2 Strohmayer W. Familiäre Tabes auf erblich-degenerativer Grundlage. Neurol. Zentralbl. 26: 754 1907.
3 Burrow J. L. Familial Tabes Dorsalis. J. Neurol. & Psychopath. 1: 246 (Nov.) 1920.
4 Nücke P. Erbllichkeit und Pradisposition resp. Degeneration bei der progressiven Paralyse der Irren. Arch. f. Psychiat. u. Nervenk. 11: 295 1906.
5 Nichols H. J. Observations on a Strain of Spirochaeta Pallida Isolated from the Nervous System. J. Exper. Med. 19: 362 1914.
6 Levaditi C. and Marie A. Etudes sur le treponeme de la paralysie generale. Ann. de l'Inst. Pasteur 33: 741 1919.

7 Jahnke F. Das Problem der progressiven Paralyse, Ztschr. f. d. ges. Neurol. u. Psychiat. 76: 166 1922.
8 Noguchi Hideyo. Venereal Spirochetosis in American Rabbits. J. Exper. Med. 35: 391 (March) 1922.
* Read before the Southern Surgical Association Dec. 12 1922.
* From the surgical service the roentgen ray department and the medical laboratories of the Massachusetts General Hospital. The metabolic studies were aided in part by a gift from Dr. William Norton Bullard.

of inflammation. Combining these two aspects of thyroid disease into one comprehensive system, which will satisfy both clinical and pathologic demands, is not simple. For the present we are interested solely in those cases of thyroid disease which show evidence of an associated constitutional disturbance, apparently due to a toxemia. While as yet there is no conclusive scientific proof of the cause of these symptoms, they are best explained in the main by an increased output of the active principle of the thyroid gland, thyroxin,¹ which apparently acts to stimulate oxidative processes throughout the body. This hypothesis, which associates evidence of toxemia with an increased activity of the thyroid, is accepted for the purposes of this paper, as being the best in accord with clinical observation.

Clinically, the determination of the basal metabolic rate gives us the relation of these increased oxidative changes to a normal standard. The degree of elevation of the basal metabolism enables us to approximate the extent of the thyroid activity. Increased basal metabolism is not only an essential concomitant to the diagnosis of increased thyroid function, but also the most accurate single measure by which to judge the progress of the disease and note the effect of treatment. It is not in itself a measure of the degree of operative risk in a given case, but it is an important factor to be taken into consideration with the clinical aspects.

Persistent increase of thyroid activity occurs, with rare exceptions, in conjunction with two types of changes in the thyroid gland, one a diffuse hypertrophy (hyperplasia), and the other an adenomatous change.² Associated with these two pathologic changes are two clinical types of disease. The first type is exophthalmic goiter, the second, adenomatous goiter with hyperthyroidism. For the clear recognition of the second type we are indebted to Plummer.³ It differs clinically from exophthalmic goiter in developing at a somewhat greater average age in patients who have had a pre-existing goiter for many years, in the absence of eye signs, and in the somewhat less intense nervous symptoms. It occurs in from 17 to 20 per cent of the cases of adenomatous goiter in which resection was done at the Mayo Clinic.² For the constitutional disturbance associated with these two types of thyroid disease, hyperthyroidism is used as a convenient term, although it implies an assumption in regard to etiology not completely proved.

FORMS OF TREATMENT

In the present stage of the treatment of hyperthyroidism, the most effective measures aim at a partial destruction of the thyroid gland. Of these measures the ones that now appear to yield the best results are surgery and irradiation. Neither is a new form of treatment. Reports of the therapeutic use of the roentgen ray in exophthalmic goiter have appeared in the literature since 1905. In the Massachusetts General Hospital, a series of cases of hyperthyroidism treated by the roentgen ray was begun by Holmes in 1914. These results of the treatment were reported by Holmes and Merrill⁴ in 1919. From the same clinic, Means and Aub,⁵ using the basal metabolism as an index of

intoxication in exophthalmic goiter, compared the effect of treatment by roentgen ray and by surgery.

Previous to the latter part of 1919, patients with hyperthyroidism coming to the Massachusetts General Hospital were treated, some by surgery and some by roentgen ray, without close cooperation between the two departments, and in occasional instances without detailed study by the medical services. For this reason it seemed wise to coordinate the efforts of the hospital. To this end, in October, 1919, a committee composed of two representatives from the medical, one from the roentgen-ray and three from the surgical services was formed which would have charge of the study and in most instances of the treatment of cases of thyroid disease. The present paper is based on cases studied and treated by the thyroid committee.⁶ The conclusions drawn from the cases are my personal conclusions, and not those of the committee.

The results obtained in hyperthyroidism by irradiation with the roentgen ray was felt by the committee to be sufficiently encouraging to justify a continuation of this form of treatment in selected cases. At the same time the committee believes that roentgen-ray treatment should be limited, as stated by Holmes and Merrill,⁴ to cases which show symptoms apparently due to increased function of the gland, such as increased metabolic rate, rapid heart action, nervousness, loss of weight and weakness. Goiters with normal or reduced function, requiring treatment for deformity, pressure on adjacent structures, potential malignancy, or potential hyperthyroidism, should be treated by surgery and not by roentgen ray. The only exception to this is in malignant goiter beyond reasonable hope of benefit from operation. Here the roentgen ray has an important role. Beyond this, the roentgen ray is not a treatment for goiter, it is a treatment for hyperthyroidism.

On what evidence should a diagnosis of hyperthyroidism be based? Persistent increase in the basal metabolic rate is considered necessary to confirm the usual clinical evidence in the diagnosis of hyperthyroidism. On the other hand, a basal metabolism consistently within normal limits should exclude hyperthyroidism. The only condition that would justify roentgen-ray treatment at all is obvious hyperthyroidism confirmed by increase in basal metabolism, or persistent and clearly marked increase of basal metabolism in a patient suggesting thyroid disease, who showed on careful study no other cause for increased metabolic rate.

Beyond accurate diagnosis there are certain other essential conditions without which roentgen-ray treatment should not be undertaken. The first is adequate modern roentgen-ray equipment, with ability to measure dosage. The second is means of estimating the degree of benefit obtained by determination of the basal metabolism as well as by clinical observation. Without this a slight degree of persistent hyperthyroidism demanding further treatment may be continued when there is danger of myxedema. The third is careful and accurate clinical supervision. An open mind should be kept in regard to switching to surgical treatment, if improvement is not rapid and complete.

If these conditions are fulfilled, as I believe they have been in cases treated through the Massachusetts General Hospital thyroid clinic, what are the probabilities

1 Kendall E C. *Tr. A. Am. Phys.* 1915, p. 420.
2 Plummer H S. *Oxford Medicine* 3: 839.
3 Plummer H S. *The Clinical and Pathologic Relationships of Hyperplastic and Nonhyperplastic Goiter*. *J. A. M. A.* 61: 650 (Aug. 30) 1913.
4 Holmes G W and Merrill A S. *The Treatment of Thyrotoxicosis by Means of Roentgen Ray*. *J. A. M. A.* 73: 1693 (Nov. 29) 1919.
5 Means J H and Aub J C. *A Study of Exophthalmic Goiter from the Point of View of the Basal Metabolism*. *J. A. M. A.* 69: 33 (July 7) 1917. *Basal Metabolism in Exophthalmic Goiter*. *Arch. Int. Med.* 24: 645 (Dec.) 1919.

6 Dr C. A. Porter who supplied much of the data, assisted by Dr G. W. Holmes, Dr J. H. Means, E. W. Allen, and Dr

ties of "cure" by the roentgen ray in selected cases? This necessitates a definition of "cure" When, as suggested by Dr C A Porter, the basal metabolism is reduced permanently to within normal limits, we have done all that is possible by surgery or, possibly, by the roentgen ray, to produce a "cure" This does not necessarily mean that a roentgen-ray "cure" is as good as a surgical "cure" In either case, permanent organic change may have occurred which is beyond benefit, or symptoms from the underlying unknown cause of exophthalmic goiter, or from changes in the quality of the thyroid secretion may persist It is hopeless to expect that surgery or the roentgen ray will relieve permanent organic damage caused by the disease These patients as a group are likely to represent inferior risks during life Permanent reduction of the metabolism to within normal limits is ordinarily accompanied by marked improvement, subjective and objective, and in this sense "cure" is used

Means and Holmes⁷ state that in a recent series of fifty-eight cases of hyperthyroidism treated by the roentgen ray, forty-four cases were exophthalmic

goiters show either recovery or improvement coincident with the treatment, and that in exophthalmic goiter, if good results are not secured with the roentgen ray in a few months, surgery should be employed

In comparison with the foregoing series of cases treated by the roentgen ray, I have charted the metabolism, pulse and weight in thirty consecutive cases in which surgical treatment has been completed The numerous metabolism determinations have been made under the direction of Dr J H Means, to whom I am indebted for permission to use them Complete surgical treatment is considered to consist of subtotal thyroidectomy, or the removal of the whole gland except an amount which, in the surgeon's judgment, is necessary to maintain normal thyroid function, usually consisting of the inner posterior portion of both lobes Except in mild cases, this result is obtained by a series of graded operations While ligation of the thyroid arteries, or hemithyroidectomy, is occasionally curative, these operations ordinarily represent only a stage which the patient passes through on the way to a subtotal thyroidectomy, and it is manifestly unfair to judge surgery by the results from these partial operations

Of the thirty cases of subtotal thyroidectomy, twenty-five, or 85 per cent, showed a drop in metabolism to +15 or less when last observed Four cases with an average metabolism of 69 per cent still showed evidence of hyperthyroidism, although clinically greatly improved, presumably because the surgeon failed to estimate correctly the amount of gland which should be removed to restore metabolism to within normal limits In one mild case there has been hypertrophy of part of the remaining thyroid tissue, with return of symptoms, and the patient is now convalescing from removal of more of the gland

An examination of Charts 1 and 2 will show that they are constructed on a similar plan While both start out

with the maximum number of cases, only relatively few cases are followed throughout the whole period The number of cases figuring at any time is shown by the figure above each ordinate The starting point taken in the surgical cases has been the last metabolism determination before operation The curves obtained are in no sense end-result curves, they approximate, however, the results obtained in each class of cases as a group

A comparison of the composite chart of the cases treated by roentgen ray and those treated by thyroidectomy shows that the average results in all cases treated by subtotal thyroidectomy are better than the results in a selected two thirds of the cases treated by roentgen ray The metabolism shows a drop to about +10, as compared with +20 for the roentgen-ray cases, the pulse, a drop to 80, as compared with 90, the weight, a tendency to more persistent and greater increase The rate of fall in metabolism and pulse is about equal in the two charts The reason for this is that in certain of the patients who underwent ligation of both superior thyroid arteries, followed by thyroidectomy in two stages, the whole of the surgical treatment required four months, and in one case eight months for completion For comparison, a composite chart of nine cases treated

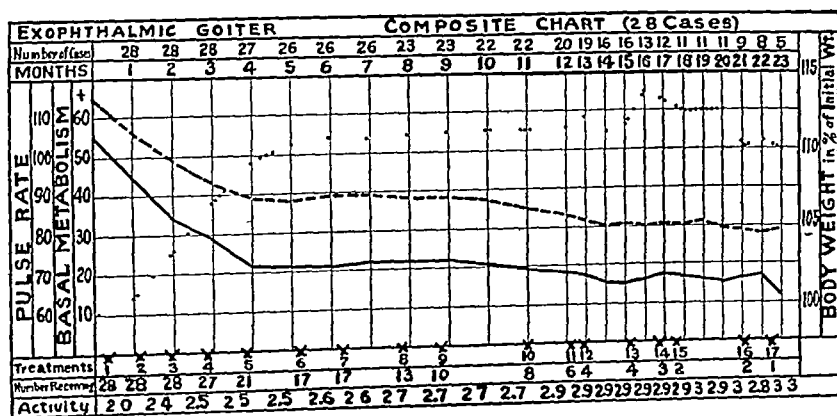


Chart 1 (from Means and Holmes)—In this and the accompanying charts the solid black line denotes metabolism the interrupted line pulse and the dotted line weight In this chart, X indicates roentgen ray treatments, the figure below giving the number of that particular treatment Under activity is indicated the magnitude of the rest factor Three grades of activity have been arbitrarily selected 1 complete rest in bed 2 patient not in bed but doing no work 3, patient working or following usual mode of life In the composite the averages of the individual activity figures are shown for each month

goiter, and fourteen were classed as toxic adenoma Of the forty-four exophthalmic patients, thirteen were apparently cured, and fifteen were improved but not rendered entirely free from hyperthyroidism Sixteen showed little or no improvement, eight of the latter came to operation and were permanently cured None of the patients seemed to be made worse by the treatment Two of the patients that improved were later operated on, and one of these died This was the only death known Of fourteen patients with toxic adenoma, all improved and five were cured A composite chart of metabolism, pulse and weight curves of twenty-eight patients with exophthalmic goiter that improved under roentgen-ray treatment showed a maximum benefit during the first four months of treatment This chart (Chart 1) is reproduced here by permission of the authors No further significant drop in pulse or metabolic curves occurred in the next six months in spite of more treatments In the second year there was a slight drop They conclude that the roentgen ray probably has a beneficial effect in toxic goiters, that about two thirds of the patients with exophthalmic

⁷ Means J H and Holmes G W Further Observations on the Roentgen Ray Treatment of Toxic Goiter Arch Int Med, to be published

by immediate subtotal thyroidectomy in one stage is added. Here the sharp fall in metabolism and pulse and gain in weight is striking. There can be no doubt that the average results in surgery are better than those following roentgen-ray treatment.

RESULTS OF TREATMENT

In discussing these results, there are three questions of principal importance. 1. Is the improvement noted

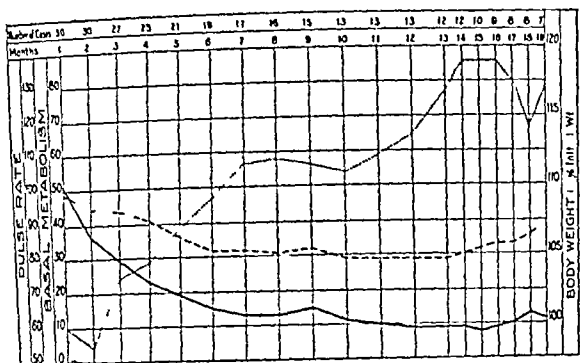


Chart 2.—Exophthalmic goiter composite chart thirty consecutive cases subtotal thyroidectomy. In this chart and Chart 3 the curves begin at the time of the first operative procedure. The averages used as a starting point are those obtained at the first metabolism determination before operation. This preceded operation by a variable period which is not shown. The time in months should begin with zero and not with one.

following roentgen-ray treatment due to fluctuation in the disease or to the treatment? 2. If the roentgen ray is used, what class of cases should it be used in? 3. If the results of surgery are better in general than those of the roentgen ray, why should the roentgen ray be used at all?

After seeing the cases treated by the roentgen ray, I have no hesitation in saying that I agree with Means and Holmes, and believe the improvement in the majority of instances at least due to the roentgen ray. In my opinion, the improvement coincident with the use of the roentgen ray is too sudden and striking to be accidental. In a few instances this is emphasized by a preliminary period of observation during which no change in the course of the disease occurred. In some cases the results of treatment are as brilliant as any I have seen by any therapeutic method. Nor is the improvement due to a long period of rest, as in the series of cases reported by Kessel, Lieb and Hyman.⁸ While it has been thought desirable to carry out, when possible, a study of these cases in the hospital before instituting treatment, in the majority of cases there has been no marked change in the way of life. The average activity, as shown by Means and Holmes on Chart 1, has been between 2 and 3, in which 1 represents rest in bed, scale from 1 to 3, in which 1 represents rest in bed, 2, partial rest, in which the patient is up and about, but has rest periods and does not work, and 3, ordinary mode of life. If the roentgen ray were inert, we should expect patients to get worse as well as better. As a matter of fact, this has not occurred.

If the roentgen ray is effective in certain cases of goiter, it is possible to detect those cases in which it is likely to show good results. It has not proved

of the hyperthyroidism, as shown by the level of the metabolism, is a factor determining the success or lack of success of roentgen-ray treatment. An impression that recent cases in young persons were more responsive to the treatment was not borne out by their statistical study. There are, however, certain cases in which the roentgen ray seems to me unsuitable. Among these are adenoma with hyperthyroidism. Here the cause of the symptoms seems to be within the thyroid gland, and not only is it logical to remove this cause surgically, but the late results of operation are better than in exophthalmic goiter. Judd⁹ reports 83 per cent of cases of adenoma with hyperthyroidism cured by surgery, as compared with 65.8 per cent of patients with exophthalmic goiter. Another group of cases consists of those showing organic damage, particularly cardiac. In these cases I believe that the time consumed by roentgen-ray treatment may lead to further damage. These patients need certain relief from their toxemia. This can be assured only by surgery. A course of roentgen-ray treatment may leave us four or five months along, and no better off. If the roentgen ray is used in these cases, it should be as an adjunct to the effect of preliminary ligation of the thyroid arteries.

The economic situation may have a bearing on the choice of the roentgen ray or surgery. For instance, a wage earner may well desire the most rapid and certain means of cure. On the other hand, for a mother with several young children, it may be advisable to try the safer course of a series of roentgen-ray treatments. In general, it can be said that the roentgen ray should not be used in any case in which a few months without relief is likely to be productive of definite damage, or in adenomatous goiter with hyperthyroidism, except in unusual instances. If it is used, a definite time-limit should be fixed which I think could well be set for four

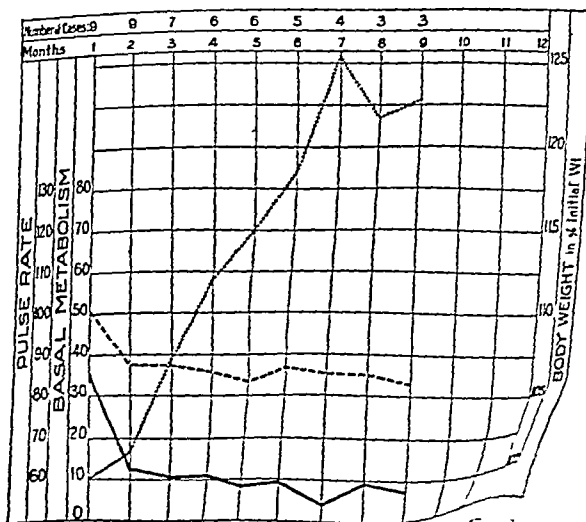


Chart 3.—Exophthalmic goiter composite chart thirty consecutive cases subtotal thyroidectomy.

months, during which the patient treatments. If a case has not been seen, be undertaken.

active In exophthalmic goiter, the ultimate cause of the disease is unknown By removing part of the gland we are not affecting the cause, we are merely removing part of a gland that is excited to hyperfunction The changes accompanying hyperfunction are still present in the part of the gland that remains The amount of the gland left to maintain thyroid function is purely a guess on the part of the operator When surgery can accomplish safely removal of a proper proportion of the gland, it has reached its limit The roentgen ray, on the other hand, while also acting as a destructive physical agent, has nevertheless the possibility of indefinite expansion as a means of treatment Improvements in technic and manner of application may lead to results as yet unobtained It shows sufficient promise to be given opportunity

Certain minor advantages have been claimed for roentgen-ray treatment These are absence of operative scar, sparing the patient the distress and discomfort of going through operative procedures, and the fact that hospitalization may not be necessary Although these advantages loom large in the minds of patients, hyperthyroidism is a sufficiently serious condition in its immediate and remote effects to make these advantages deserving of slight consideration in advising treatment

The chief advantage of the roentgen ray is that its immediate mortality is nil The use of the roentgen ray in our clinic is undoubtedly influenced by the fact that the mortality in the cases of hyperthyroidism treated surgically since the organization of the thyroid committee has been 71 per cent There have been five deaths among seventy patients, in some of whom the surgical program is as yet incomplete The surgical aspects will be presented later in detail While the mortality from surgery reported from certain large clinics is small, this would probably not be true of small series and isolated cases compiled throughout the country The stage of gaining experience in this condition is likely always to result in mortality It must be remembered that mortality is often figured from the number of operations, not from the number of patients treated, and that figures may combine toxic and nontoxic cases It has been said that recommending the roentgen ray has done harm It is also true that unqualifiedly recommending operation on the diagnosis of exophthalmic goiter may do harm

The roentgen ray will accomplish the "cure" of a certain percentage of cases In others it will bring about a degree of improvement that will permit of safer operation, or make unnecessary some of the preliminary operative steps It is another weapon in the treatment of hyperthyroidism The question is how and when to use it

OBJECTIONS TO ROENTGEN-RAY TREATMENT

Many objections have been raised to roentgen-ray treatment The chief of these is the temporary relief afforded While it is true that in certain cases there is a tendency for the metabolism to rise after a period within normal limits, these are a small minority In these, as a rule, roentgen-ray treatment results in a second drop to the normal metabolic level On the whole, the results in cases brought to within normal metabolic limits seem to me satisfactory

A second objection is the occurrence of myxedema Means and Holmes⁷ report that since the beginning of the roentgen-ray treatment at the Massachusetts General Hospital, four patients have developed myx-

dema Two developed it within the first four months of roentgen-ray treatment In both, the depression of metabolism proved temporary One patient developed myxedema eighteen months after roentgen-ray treatment, another, five years after Whether in these cases there is any actual connection between the treatment and the myxedema is uncertain It seems to me that the danger of myxedema following controlled roentgen-ray treatment is more than balanced by the possibility of recurrent laryngeal nerve injury, particularly bilateral abductor paralysis, or parathyroid injury, following surgery

Another objection is the increased difficulty of operation following the use of the roentgen ray The cases coming to operation in this clinic after roentgen-ray treatment have been treated here They have been as a rule exophthalmic cases, if toxic adenomas, the goiter has been small In these cases there has been no appreciable increase in difficulty of operation The gland has not been adherent to the anterior muscles The only change I have noted has been a somewhat firm consistency to the gland, and possibly a slight increase in fixation posteriorly The increased operative difficulty has been no more than that after preliminary ligation

A fourth objection is the time required for roentgen-ray treatment If the cases are carefully selected and the treatment is strictly limited to four months, this is not of great importance, compared with the possible benefit It is not longer than the period that may be required for a graded series of preliminary operations

My personal objections to roentgen-ray treatment are somewhat different In the first place I cannot help fearing remote ill effects from so powerful and so little understood a physical agent It can only be said that these as yet have not developed Further, the suggestion of an alternative form of treatment, surgery or roentgen ray, lessens the authority of the clinic It is hard under these conditions at times to carry out surgical procedures when they become advisable

I have no quarrel with the cases apparently cured by the roentgen ray These results seem to me sufficiently good Nor am I troubled by the cases in which the roentgen ray frankly fails These patients have lost time and have been put to trouble and expense, but they are willing to undergo operation, and the ultimate results are likely to be good The patients improved, but not cured, seem to me a serious objection They are sufficiently benefited to feel reasonably well and carry on their normal life and work with fair comfort Still, they are distinctly and recognizably thyrotoxic Basal metabolism may show a persistent elevation of from 15 to 25 points Not infrequently they may present bizarre forms of hyperthyroid abnormality In some cases the picture may be so close to normal that it is difficult to say whether operation is advisable or not In other cases, thyroidectomy may be clearly indicated But these patients are likely to refuse surgery Here is the real objection The patients recognize their great improvement, and since they are able to live and work in relative comfort, they do not wish to undergo operation The ultimate fate of these patients is as yet uncertain My feeling is that they go on receiving organic damage, and that their life and usefulness is shorter than it would be from the more complete cure possible by surgery

A fourth class of cases, of no significance in determining the value of roentgen-ray treatment, is nevertheless of practical importance These are the patients

that start roentgen-ray treatment and for one reason or another abandon it. It is true that many of these patients receive adequate surgical treatment elsewhere. Some undoubtedly do not, and in them the disease may progress without any adequate measures of relief. The fate of these patients is beyond the control of the clinic, a responsibility is assumed in regard to them which, through their own fault, cannot be fulfilled. It is possible that surgery might have been refused. At the same time a definite surgical program, once started on, is less likely to be abandoned.

It should be appreciated that there is no less responsibility in advising roentgen-ray treatment than in advising operation. The ill effects of the roentgen ray are more remote, and require more imagination to grasp. It should not be advised as a way of postponing a difficult decision on account of its lack of immediate danger. The man in charge of roentgen-ray treatment, like any other therapist, is likely to see little but good from his efforts. Some results are brilliant. Many other patients are much improved. The failures are likely to be operated on, or to drift away, in either case they disappear from the clinic. The harm that needs to be visualized comes, I believe, to these improved patients, through damaging effects of a slight persistent hyperthyroidism. The stage of improvement without "cure" I believe to be the serious phase of roentgen-ray treatment, it should constantly be borne in mind.

If roentgen-ray treatment is advised at all, it should be with the clear understanding that it will be tried for only a few months, that relief is uncertain, that, if improvement is not sufficient at the end of that time, operation must be undertaken. The patient should know that operation will eventually be advisable more often than not.

CONCLUSIONS

1 Subtotal thyroidectomy is a more effective form of treatment of exophthalmic goiter than roentgen-ray treatment.

2 The roentgen ray has a beneficial effect in certain cases of hyperthyroidism.

3 This effect is not sufficiently constant to be relied on as the sole form of treatment. In selected cases of exophthalmic goiter, the use of roentgen-ray treatment under careful control is justifiable for a period of four months, during which the patient receives about five treatments.

4 If after four months of treatment, the degree of improvement obtained in general condition and basal metabolic rate does not promise "cure," operation should be undertaken.

224 Beacon Street.

Investigations of Canned Meats—A report on the bacteriology of canned meat and fish prepared by the food investigation board of Great Britain recently issued represents the first comprehensive study which has been made in that country of the bacteriology of canned food products. The board made a detailed examination of 223 cans of food, 246 of which were rejected. The most striking fact in the report is the nonsterility of cans which were externally sound. Less than 30 per cent of these cans when examined were sterile; the percentage not sterile ranged from 30 for sardines to 100 for crab. Of canned meat 60.6 per cent of the cans were not sterile. This report the *Lancet* says "gives the death blow to the generally accepted conclusion that canned foods remain good because the processes of preservation by heat have sterilized them."

RENAL GLYCOSURIA

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The advent of blood sugar studies made it possible to divide glycosurias into two general classes: (1) glycosuria with hyperglycemia and usually accompanied by symptoms, and (2) glycosuria with normal blood sugar, and no symptoms. The latter class comprises the so-called renal glycosurias. These glycosurias are usually discovered quite accidentally; they have normal or subnormal blood sugar findings, they are relatively independent of the carbohydrate intake, and they are without symptoms of diabetes mellitus. In some cases, however, the glycosurias disappear on a diet containing small amounts of carbohydrate or carbohydrate-free diets.

The renal glycosurias have of late aroused a great deal of interest because of their obscure etiology, relation to diabetes mellitus and ultimate prognosis. The commonly accepted theory is that renal glycosuria is due to a lowering of the kidney threshold for glucose, caused by an increase in the permeability of the kidney epithelium. This explanation has become so common that authorities talk about kidney permeability, glucose threshold, and the like as if these were well established facts. The vague labeling of unknown conditions is well expressed in a recent editorial in *THE JOURNAL*.¹

Why the "permeability" of the kidneys for sugar should hinge upon a definite concentration of the carbohydrate in the blood has never been clearly explained except by fantastic analogies, nor has it been clear why the renal threshold should "shift" under varying physiologic or pathologic conditions. In current discussions of sugar metabolism, the authorities have been wont to speak glibly of sugar "assimilation," "tolerance," "thresholds," and the like, without offering any really clear explanation of precisely what is meant.

This being the status of affairs, it is desirable to report another case that may possibly throw light on the etiology of renal glycosurias. The case here reported pertains to myself and presents a study over six years.

REPORT OF CASE

In 1916, I happened to discover 0.5 per cent glucose in my urine. My instructor in physiologic chemistry thought that the glycosuria was due to an excessive intake of carbohydrate. The discovery the next day of 0.2 per cent glucose following ingestion of a glass of milk and one slice of bread soon disproved the assumption and led me to seek medical advice. My physician assured me of the harmless nature of the glycosuria and advised me to determine my carbohydrate tolerance. Daily reductions of the carbohydrate amounts had no effect on the glycosuria until I reached about 30 gm of carbohydrate in the form of starch. Any amount above 30 gm would invariably cause glycosuria. At no time before or after the discovery of glucose in the urine did I have a sign or symptom of diabetes mellitus or of thyroid disturbance.

My past history was negative except for a case of measles at the age of 3. In my family history there was no record of diabetes mellitus or infectious or nervous disease. My physical examination except for a deflected septum and infected cryptotonsils was negative.

A complete lack of symptoms and an assurance of the harmless nature of the glycosuria led me to disregard the matter and to continue my usual life. I carried on as usual.

A few months later I felt the same and returned from a long walk following a rather heavy dinner. To my surprise the same amount of glucose was present in the urine.

experiment three times a day for two weeks, and ingestion of as much as 500 gm of carbohydrate would cause no glycosuria, provided the meal was immediately followed by a walk of at least twenty minutes. If I rested for twenty minutes right after a meal, and then took a walk, glycosuria would invariably follow. The thought that this symptomless glycosuria might change into true diabetes mellitus influenced me to search for its cause.

In 1918, I had an attack of acute follicular tonsillitis, and was sick for a week. This attack, in addition to the fact that the tonsils were infected, led me to have a tonsillectomy performed with no other thought than the avoidance of further attacks. In spite of only one attack of tonsillitis, the tonsils were very much infected.

About six weeks after tonsillectomy, while analyzing the urine after a meal consisting of about 90 gm of carbohydrate, I found no glucose in the urine. Any amount above 90 gm would cause from 0.2 to 0.4 per cent glucose. The blood sugar following the ingestion of 175 gm of glucose per kilogram of body weight was pronounced perfectly normal by Dr. Olmsted of Barnes Hospital metabolism department.

The unexpected rise in carbohydrate tolerance following the removal of the faucial tonsils made me feel almost certain that a remaining focus of infection in the nasopharynx was keeping the carbohydrate tolerance down.

On reading Sluder's article on the lingual tonsils as a focus of infection frequently taking the place of the faucial tonsils after the latter have been removed, I concluded that my lingual tonsils were infected. An examination of the lingual tonsil by Dr. Sluder proved the tonsil to be hypertrophied and chronically infected. After two weeks of treatment by applications of saturated solution of silver nitrate to the lingual tonsil, the carbohydrate tolerance rose to 150 gm. On cessation of treatments, the carbohydrate tolerance would drop back to 90 gm, and the tonsil would enlarge again. Since the tonsil showed no change, I was advised to have it removed. During the summer of 1920, I had the lingual tonsil cauterized.

The day following operation, while testing the urine an hour after the ingestion of a glass of milk, I found glucose. This sudden drop in tolerance continued for nearly a week until the slough at the site of the operation came off. Tolerance then began to rise, and by the end of the third week I was able to consume 100 gm of pure glucose without glycosuria resulting. For nearly two years following the lingual tonsillectomy, repeated examinations of the urine revealed no glucose, in spite of the most liberal amounts of carbohydrate consumed.

Although the relation between the infected tonsils and the glycosuria was definite, the exact *modus operandi* remained unknown. Sluder's observations on the lingual tonsil as a cause of thyroid irritation, plus the fact that on several occasions thyroid extract caused glycosuria, suggested irritation of the thyroid as a possible cause of the symptomless glycosuria.

In June, 1922 I had to give up this hypothesis. A urine examination following a meal containing, probably, 300 gm of carbohydrate revealed 0.42 per cent glucose. About three months previous to this finding, I had reported the case to the Jackson County Medical Society as a case of renal glycosuria completely cleared up following removal of infected tonsils.

An examination of the pharynx revealed an infected piece of lingual tonsil. This time, I decided to postpone the removal of the tonsil until I had made a more thorough study of the glycosuria. A number of questions arose: Was the blood sugar still normal? What was the new carbohydrate tolerance? Was exercise still inhibiting glycosuria? Was there any endocrine disturbance? What role, if any, did the nervous system play in this glycosuria? To answer these questions, I made a number of experiments.

EXPERIMENTS

A blood analysis following ingestion of 100 gm of glucose gave these data: fasting, 0.12 per cent, first hour, 0.15 per cent, second hour, 0.13 per cent, third hour, 0.12 per cent.

The three hourly urines showed 0.42 per cent glucose. In other words, a normal blood sugar with glycosuria.

Experiments to determine the carbohydrate tolerance demonstrated that in the morning following a night's fast, I could consume any amount of carbohydrate without a resultant glycosuria, in the afternoon, 120 gm of carbohydrate would cause the excretion of 0.4 per cent glucose in the urine, exercise for twenty minutes or more right after any carbohydrate intake would prevent glycosuria, exercise of less than twenty minutes' duration would fail to prevent glycosuria, exercise taken later than fifteen minutes after a carbohydrate meal would fail to prevent glycosuria.

While conducting the foregoing experiments, I observed that a change in weather had a peculiar influence on my carbohydrate tolerance. For many days, I could not understand why on some days glucose was excreted on an intake of 120 gm of carbohydrate, whereas on other days as much as 500 gm would cause no glycosuria. Repeated observations convinced me that cold weather had an inhibitive effect.

This peculiar relation between temperature and carbohydrate tolerance led me, a year before, to believe, erroneously, that in my case glycosuria was due to a thyroid disturbance, since my experiments with thyroid extract were conducted during warm weather.

Experiments with various endocrine products proved to be entirely negative. Thyroid extract taken until the pulse rate increased from 75 to 100 a minute caused no glycosuria, if the carbohydrate intake was less than 120 gm. Epinephrin chlorid, 1 cc of a 1:1,000 solution, hypodermically, caused no glycosuria on less than 120 gm of carbohydrate, and no greater glucose output on a high carbohydrate intake than occurred without the epinephrin chlorid. Solution of the anterior and posterior lobes of the pituitary also failed to produce glycosuria.

One afternoon while looking at the lingual tonsil, I happened to press the laryngeal mirror against the posterior wall of the pharynx, and thereupon experienced a marked pressure under the middle of the sternum, evidently due to esophagospasm, caused by reflex stimulation of the vagus.

The fact that a mechanical stimulation of the pharynx reflexly stimulated the vagus, suggested that the toxins of the infected tonsils might act in a similar way, reflexly stimulating the vagus nerve endings in some of the organs concerned in carbohydrate metabolism. To prove this, I decided to remove the vagus influence by atropin sulphate, and accordingly, took $\frac{1}{400}$ grain (0.00065 gm) of atropin sulphate hypodermically, ten minutes after ingestion of 120 gm of carbohydrate. Hourly urine specimens for three hours failed to reveal any glucose. These experiments were repeated on seven successive days with diets ranging from 120 to 500 gm of carbohydrate, and the results were identical. Moreover, I found that if I took the atropin later than ten minutes after carbohydrate ingestion glycosuria would invariably follow. In other words, the atropin sulphate had much the effect of exercise. Experiments with various doses of atropin sulphate proved that $\frac{1}{400}$ grain was the smallest dose necessary to inhibit glycosuria. Blood sugar examination following ingestion of atropin failed to reveal any increase.

The peculiar similarity of action between atropin sulphate and exercise suggested that there was something common to atropin and exercise that inhibited glycosuria. Atropin and exercise had to be taken immediately after a carbohydrate meal, both had to be of definite quantities to produce the inhibitory effect.

The next interesting question was: What was the exact mechanism by which exercise produced the same effect as atropin sulphate? The fact that exercise was ineffective if taken one-half hour after carbohydrate intake led me to believe that it was not the burning of the glucose by the muscles during exercise that was responsible for the inhibitory effect on glycosuria, but probably the greater intake of oxygen during exercise. If exercise prevented glycosuria by a direct burning of glucose as suggested by Allen,³ why didn't exercise have the same effect, if taken one half hour instead of ten minutes after a carbohydrate meal?

2 Sluder: Greenfield. Some Clinical Observations on the Lingual Tonsil Concerning Goltre, Glosadymia and Local Infections. *Am. J. M. Sc.* 156: 2-8 (Aug.) 1918.

3 Allen: Diabetes Mellitus. Nelson: Loose Leaf Living Medicine 3: 99.

In other words, it seemed that there was something in the exercise that had to be supplied to the organs of carbohydrate metabolism before the glucose left the intestines and entered the portal circulation. To prove that this substance was oxygen, I performed the following experiments. Five minutes after a meal consisting of 300 gm of carbohydrate, Dr Ralph Duncan administered pure oxygen by the Barach method. Hourly urine examinations for three hours failed to show any glucose. A similar experiment performed twenty minutes after carbohydrate intake instead of five minutes, resulted in the excretion of 0.44 per cent glucose. The oxygen, then, behaved exactly like exercise. Both had to be taken right after a carbohydrate meal, and both had to be taken for a certain length of time. The evidence obtained from the foregoing experiments, then, is sufficient to convince one that exercise inhibited glycosuria by causing a greater intake of oxygen, and not by a direct burning of glucose.

COMMENT

The relation between the focal infection in the tonsils and the symptomless glycosuria is evident. The various processes involved in bringing about the glycosuria need further explanation. The rapidity with which glucose appeared in the urine, twenty minutes after carbohydrate intake, suggests that the glucose on reaching the liver met with some interference and passed through the latter without absorption. The fact that exercise right after carbohydrate intake absolutely prevented glycosuria suggests that exercise removed something that was depressing the liver cells. Exercise or oxygen if taken later than twenty minutes after carbohydrate intake failed to prevent glycosuria, suggesting that the glucose reaching the liver would be turned down, as it were, before the inhibition from the liver was removed. The fact that atropin sulphate invariably prevented glycosuria and that this drug has a selective depressing effect on the vagus endings would further suggest that the depression in the liver cells was due to some vagus disturbance.

In view of the fact that the splanchnics, on stimulation, cause a conversion of glycogen into glucose and greater discharge of the latter into the blood, it is possible that the vagi have the opposite effect, namely, on stimulation they inhibit the conversion of glucose into glycogen. From the negative results obtained with epinephrin chlorid, the effect of the splanchnics can be excluded in this case.

The absence of glycosuria in the morning in spite of the ingestion of 500 gm of carbohydrate, and the appearance of glycosuria in the afternoon on 120 gm of carbohydrate, is further evidence of a disturbance of glycogenesis. In the morning, following a night's fast, the liver, being depleted of its glycogen, would assimilate all the glucose brought to it, whereas, in the afternoon, having stored up enough glucose from the morning meal, it would be unable to assimilate more than 100 gm, sending the rest to the kidneys for elimination.

If we assume the foregoing hypothesis of stimulation of the vagi inhibiting glycogenesis, it is easy to conceive how the toxins from the infected tonsils could stimulate the glossopharyngeal nerves of the pharynx and, reflexly, the vagi. That the vagi can be reflexly stimulated by stimulation of the nasopharyngeal nerves has been shown by Auer,⁴ who produced gastric inhibition by chemical and mechanical stimulation of the nasopharynx, and recently by Carlson and his associates.⁵ The latter by stimulating the tongue and

pharyngeal mucosa caused contractions of the cardia and lower esophagus in cats. These results were also obtained by tetanization of the central endings of the glossopharyngeal nerves.

The next interesting question is, Why should the kidneys excrete glucose, when it is at a normal level in the blood? If we admit the foregoing hypothesis of the toxins from the infected tonsils reflexly stimulating the vagi and thus inhibiting the conversion of glucose into glycogen in the liver cells, it is possible that the same toxins might stimulate the nerve endings in the cells of the kidney tubules, either reflexly or directly, in the process of their excretion from the kidney. This stimulation by increasing the excretory function of the epithelial cells causes a more rapid elimination of the glucose.

Whether or not this hypothesis explains the processes involved in the production of renal glycosuria, the facts brought out in this case are sufficient to throw some doubt on the existing theory of a lowering of the kidney threshold and an increased renal epithelium permeability as the cause of renal glycosuria. While I do not wish to convey the idea that infected tonsils are the cause of renal glycosuria, yet the fact that in none of the reported renal glycosuria cases is there any reference to an examination of lingual tonsils, and only such reference to examination of the faucial tonsils as "tonsils, negative," with no statement as to whether an attempt was made to express or aspirate the tonsillar contents, it is possible that some of the other reported cases have a similar focus of infection somewhere in the nasopharynx. A history of repeated attacks of tonsillitis, as my case demonstrates, is not at all necessary to justify a suspicion of chronically infected tonsils. In spite of only one attack of acute follicular tonsillitis, and a complete absence of symptoms from the lingual tonsils, there was enough infection in the tonsils to cause the symptomless glycosuria.

It is also possible that toxins from sources other than the nasopharynx might stimulate the vagus endings in the liver as well as the nerve endings in the epithelial cells of the kidneys, and cause symptomless glycosuria. It is quite likely that the glycosuria of pregnancy, having all the ear-marks of renal glycosuria and disappearing with the termination of pregnancy, is caused by the placental toxins, which, as is well known, have a special predilection for the liver and kidneys.

In view of the inhibitory effect of cold weather on my glycosuria, which is probably due to a greater intake of oxygen resulting from an increased metabolism, I have had to postpone further experimentation till next spring. In reporting the case in the meantime, I am hoping that those who have cases of renal glycosuria under observation may try the foregoing experiment, and thus determine whether the observations hold for other cases of renal glycosuria.

SUMMARY AND CONCLUSION

- 1 The case here reported presents a glycosuria of 12 years' duration, since the first discovery of diabetes mellitus without symptoms of diabetes mellitus.
- 2 It presents a glycosuria with normal blood sugar but clearing up on ingestion of small amounts of carbohydrate, or with carbonyl.
- 3 Exercise, if taken intake, and continued for absolutely prevented glycosuria, liberal carbohydrate.

⁴ Auer, Am. J. Physiol. 18: 347, 1907; 25: 334, 1910.
⁵ Carlson, A. J., Boyd, T. E., and Pearce, J. F., Studies on the Visceral Sensory Nervous System. XIV. The Reflex Control of the Cardia and Lower End of Esophagus in Mammals. Am. J. Physiol. 61: 14 (June) 1922.

4 Exercise would fail to prevent glycosuria, if taken fifteen minutes after carbohydrate intake

5 The removal of infected faucial tonsils raised the carbohydrate tolerance to 90 gm, whereas, the removal of infected lingual tonsils brought the carbohydrate tolerance up to normal and caused a complete disappearance of the glycosuria for nearly two years

6 The reappearance of glycosuria was observed following reinfection of a remaining piece of lingual tonsil, following, however, intake of 120 gm of carbohydrate, instead of 30 gm, as before the tonsillectomies

7 There was an absence of glycosuria in the morning after intake of 500 gm of carbohydrate and the reappearance of glycosuria after 120 gm of carbohydrate in the afternoon

8 Glycosuria would disappear in cold weather in spite of the most liberal amounts of carbohydrate, and reappear in warm weather on intake of 120 gm

9 Exercise, oxygen or atropin sulphate, if taken immediately after carbohydrate intake, would absolutely prevent glycosuria, regardless of the amount of carbohydrate ingested

It is suggested that renal glycosuria may be due to an inhibition of glycogenesis, caused by a reflex stimulation of the vagi. The inhibition of the vagi may be of various degrees. In cases with complete vagus inhibition, glycosuria occurs even on carbohydrate-free diets, whereas, in cases with partial vagus inhibition, glycosuria clears up on intake of small amounts of carbohydrate. The appearance of glucose in the urine in spite of a normal blood sugar may be explained by an increase in the excretory function of the kidney cells, caused by a stimulation of the nerve endings of the latter by the same stimulants that act on the vagi

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SOME RECENT ADVANCES IN THE TREATMENT OF HEART DISEASE

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During recent years, our conception of heart disease has been rapidly advanced by the new knowledge gathered by two precise graphic methods the polygraph, for which Mackenzie and his co-workers are responsible, and the electrocardiograph, perfected by Einthoven, with which most of the pioneer work has been done by Thomas Lewis. The information given us by these two methods has radically revised our knowledge of heart failure, and has profoundly altered our conceptions of prognosis and treatment. Although much of this newer knowledge is based on the results obtained by workers with these instruments of precision, after one has mastered the information taught, the use of them is not necessary for ordinary clinical work, and no less an authority than Thomas Lewis says

While the pursuit of graphic work by those who possess the special aptitude and a developing interest in the method is decidedly to be encouraged yet it is clear that a universal adoption of the graphic method is neither to be anticipated nor advocated. This conclusion is largely dictated by the belief that most of the every-day disturbances of the heart beat may now be identified by relatively simple means. If

this is possible to a practitioner, then it is also possible for him to grasp the new general conceptions and to apply them to his daily work.

I will therefore discuss some of the newer knowledge of heart disease as it aids us in the prevention and treatment of cardiac failure. Another factor is the ever increasing importance attached to infection as a cause of cardiac failure, as opposed to the old and generally accepted theory of back pressure.

I consider the subject also especially timely because of the increased interest in it as a result of the recent rise in the prevalence and mortality from these diseases. Recent statistics show that the number of deaths from diseases of the heart is now twice as great as that from tuberculosis, pneumonia or cancer. A more widespread knowledge of recent advances in the prevention and treatment of this group of diseases is the most important factor in combating this condition.

I shall discuss six forms of cardiac arrhythmia (1) sinus arrhythmia, (2) heart block, (3) premature contractions, (4) paroxysmal tachycardia, (5) auricular flutter, and (6) auricular fibrillation. I shall also discuss the treatment of cardiac diseases as influenced by the presence of one or more of these conditions. In addition, I shall also refer to the treatment of functional disturbances of the heart, including effort syndrome.

SINUS ARRHYTHMIA

Irregularities of the heart produced by interference with the origin of rhythmic impulses at the sinus are termed sinus arrhythmia. As these irregularities are usually not associated with any organic disease of the heart, and are usually but an exaggeration of a normal phenomenon due to respiration, occurring in children and in young adults, they neither should suggest nor require special treatment. It is very important, therefore, to recognize this type of irregularity, as failure to do so has frequently resulted in much unnecessary treatment, and has been the cause of much worry to patient and parent.

HEART BLOCK

Heart block is an abnormal heart mechanism in which there is a delay in, or absence of, ventricular responses to auricular impulses. There is no specific treatment for this condition, but the underlying associated cardiovascular disease should be treated. As this is frequently a manifestation of infection, the use of salicylates is indicated. Attention to the hygiene of the mouth and throat as a possible source of focal infection should be considered in every case. Syphilis, alcoholism and arteriosclerosis should be treated when present.

In cases of complete heart block, the occurrence of fits and their danger in causing accidents must be borne in mind. Gastro-intestinal disturbances should receive appropriate treatment. Digitalis, although an important cause of this condition, may be used if indicated by associated pathologic conditions. Heart block in itself should not be considered a cause for limiting the activities of the patient. Hypodermic injection of 10 minims (0.6 cc) of 1:1,000 solution of epinephrin chlorid has been recommended and more recently advocated by Parkinson and Phear.¹

PREMATURE CONTRACTIONS, OR EXTRASYSTOLES

Premature contractions, or extrasystoles, are contractions of the heart that disturb the rhythmic sequence by appearing early and in response to impulses newly

¹ Parkinson J. and Phear, A. G. *Lancet* 1: 933 (May 13) 1922

formed in the myocardium. As in the case of heart block, we have no specific treatment for this condition when present, and the treatment should be directed toward the underlying pathologic condition. Here, again, it must be remembered that large doses of digitalis sometimes cause premature contractions, but digitalis is not necessarily contraindicated because of their presence.

Premature contractions are frequently present without evidence of serious organic disease, such as is manifested by signs of cardiac enlargement, and symptoms of cardiac embarrassment. In such cases, they are not in themselves evidences of serious disease, and do not call for any specific treatment. We often see this present in pregnant women, and in persons suffering with nervous conditions and many gastro-intestinal disturbances, especially those associated with flatulence.

PAROXYSMAL TACHYCARDIA

The term paroxysmal tachycardia is applied to several phenomena all characterized by rapid beating of the heart, usually ranging between 120 and 300 beats a minute, starting and ending quite abruptly. Some of these are cases of auricular fibrillation, some auricular flutter, and some simple paroxysms of tachycardia. The treatment of this condition consists of those measures intended to cut short the paroxysm during the attack, and those measures intended to prevent the paroxysms between attacks.

(a) *During Attack*—There is no known specific remedy that is invariably valuable, and it is very difficult to estimate correctly the value of the various measures recommended, as the attacks are usually self-limited in duration. However, many remedies are found valuable for these attacks and should be tried. These are changing posture, tight binder to the abdomen, ice bag to the precordium, and emetic drugs. The intravenous injection of $\frac{1}{100}$ grain of digitalin or $\frac{1}{250}$ grain of strophanthin is useful in some cases. Pressure on the vagus as it lies in the carotid sheath or over the supra-orbital nerve as it emerges from the supra-orbital foramen frequently gives almost miraculous relief. During prolonged attacks the diet should be bland and easily digestible, the bowels should be kept open, and cardiac failure, if present, should be appropriately treated by the usual means. Quinidin, which will be more fully discussed later, is valuable in cases of paroxysmal auricular fibrillation. The pain and insomnia, when present, should be controlled by morphin or chloral.

(b) *Between the Attacks*—A careful search should be made for the etiologic factor, and, when present, it should be treated. The general health of the patient should be improved, and infections, especially of a rheumatic character, carefully treated. Foci of infection in the mouth, tonsils and abdomen should be carefully looked for. Digestive disturbances, especially those associated with flatulence, should be appropriately treated. The wearing of an abdominal belt has proved of great value in preventing these attacks. Pregnancy and general anesthetics are not necessarily contraindicated, nor should the activities of the patient be restricted unless serious disease of the heart is evident by other signs and symptoms.

AURICULAR FLUTTER

Auricular flutter is a condition in which the auricles beat at a very rapid rate, usually from 240 to 360 a minute. The paroxysms of auricular flutter should be

treated along the same lines as those laid down for paroxysmal tachycardia. Auricular flutter, however, even if long continued, responds very successfully to digitalis therapy. Digitalis, given in full doses, practically always reduces the ventricular rate. As auricular flutter is due to circulating and never ending contraction waves in the auricle, digitalis creates a block in the auricles by obstructing the path of this circulating wave. Usually, it is found that full doses of digitalis convert the flutter into a fibrillation, and, when the digitalis is withdrawn, the fibrillation soon vanishes, and the normal rhythm is resumed. The corresponding improvement in the general condition of the patient occurs promptly with the restoration of the normal rhythm.

AURICULAR FIBRILLATION

In auricular fibrillation, the regular auricular contractions cease, and are replaced by fibrillatory twitchings of the auricular musculature. The normal impulses to the ventricle, being absent, are replaced by rapid and irregular ones, and the resultant ventricular contractions are very rapid and irregular as to strength and interval between beats. As this condition is present in the vast majority of cases of heart failure, its treatment is of great importance, and the reputation of the digitalis preparations in the successful treatment of heart failure is due to the favorable influence it has on the auricular fibrillation. Although the usual rules for the treatment of heart failure, such as rest, elimination and diet, must be instituted in every case, digitalis has an almost specific action in improving the condition of the patient. It acts by producing a partial heart block, in the bundle of His, abolishing most of the fine irregular impulses coming from the auricle, and reducing thereby the number of ventricular contractions. As the ventricular contractions become less frequent, each systole gains in strength, and the ideal condition is obtained when the ventricular rate approaches the normal of 72 a minute. (In counting ventricular systoles, it is important to listen over the heart as well as to palpate the radial pulse, as in this condition a pulse deficit at the radial is frequent.) This can be accomplished by the appropriate use of digitalis, if one understands its action and correct dosage. Although many preparations of the digitalis group have been used, I find that the tincture and the powdered leaf of digitalis are the most reliable, and will give satisfaction in practically all cases. It has been determined that full digitalization is accomplished by from 6 to 8 drams (22.5 to 30 c.c.) of the tincture, or from 36 to 48 grains (2.3 to 3 gm.) of the powdered leaf in the average adult weighing 150 pounds (68 kg.). The usual dose is from 20 to 30 minims (1.25 to 1.9 c.c.) of the tincture, or from 2 to 3 grains (0.13 to 0.195 gm.) of the powder given four times a day. Digitalization is completed in from four to six days.

In 1915, Eggleston² recommended the determination of the physiologic dose required, and advised giving the full dose in a very short time. I now give 1 dram (3.75 c.c.) of the tincture or 6 grains (0.4 gm.) of the powder four times a day for one or two days until the full physiologic effect is obtained. Symptoms of overdigitalization must always be watched for, the three most reliable ones being nausea and vomiting, slowing of the pulse below 70, and the developing of coupling beats. When any of these symptoms are present, the drug must be immediately stopped. After digitalization is obtained

most cases require the saturation to be continued. This can be accomplished by administering the amount eliminated, which has been determined to be the equivalent of 2 grams (0.13 gm.) of powdered leaf, or 20 minims (1.25 cc.) of the tincture daily. In cases in which the heart failure is extreme, and more rapid action of the drug is necessary, $\frac{1}{250}$ grain of strophanthin may be administered intravenously, and repeated every two hours for three doses. This, however, should be used only in those cases in which no digitalis has been previously administered.

De Meyer³ recommended the intravenous administration of 15 mg. of physostigmin in tachycardia and auricular fibrillation. Enough work, however, has not been done with this remedy to warrant an opinion at the present time.

In 1914, Wenckebach⁴ reported the results of treating a case of malaria in a Dutch merchant with quinin, an associated auricular fibrillation disappeared. In 1918, Frey⁵ recommended quinidin sulphate for the treatment of auricular fibrillation, quinidin being the least toxic of the quinin derivatives. He reports favorable results in several cases. Since then, this drug has been used by clinicians in this country and in Europe, who report favorable results in more than 50 per cent of the cases in which the normal rhythm is restored. In its action this drug differs from that of digitalis in that, whereas digitalis produces its favorable effect by reducing the number of ventricular contractions and does not influence the auricular fibrillation, quinidin, when successful, restores the normal rhythm. My own experience with about twenty cases in the last two years is even better than the average reported, as I have been able to obtain the normal rhythm in about two thirds of the cases. This drug, however, shows its greatest value in the more recent cases, as in the old and very seriously diseased hearts the normal rhythm, even when restored, did not continue very long. The usual dose is 5 grams (0.324 gm.) three or four times a day, which, when successful, will restore the normal rhythm in from four to six days, although, in one of my cases it was restored after two doses, while in another, it took two weeks. In the severer cases, I continue the saturation with quinidin by administering 2 grams (0.13 gm.) three times a day for several weeks after the normal rhythm has been restored. As some patients have an idiosyncrasy against this drug, it is recommended that 2 grams be given three times a day for the first day, and then the regular doses be followed, if no untoward symptoms are manifested.

HEART FAILURE

There remains, however, a group of cases of heart failure not associated with auricular fibrillation, the treatment of which, therefore, is less satisfactory. Those due to syphilis should receive intensive anti-syphilis treatment, although vascular syphilis responds less than that of other parts of the body. The goiter heart can be radically treated only by the removal of the toxic goiter. The digitalis preparations do not seem to influence these cases very much. The arteriosclerotic and hypertensive hearts must be treated by correcting and eliminating the factors of deleterious habits and mode of life which are responsible for most of these cases. In the primary endocardial cases which are usually rheumatic, the result of streptococcus infection,

foci of infection must be carefully sought for and appropriately treated. These are usually to be found in the teeth, tonsils, accessory sinuses, pleura, gall-bladder or appendix.

In all cases of cardiac failure, infection plays a much greater role than is generally recognized, and is the real cause of the dilatation rather than the back pressure or cardiac strain. This has been proved by carefully watching of the temperature during the failure when a slight and sometimes moderate rise has been found in many cases. The presence of a streptococcus bacteremia has been found by many who have taken cultures in cases of heart failure, and, at the Mount Sinai Hospital, since we have instituted routine blood culture in all these cases, we are finding viridant and hemolytic streptococci in many of our cases. This has great practical importance in treatment, leading to the paying of less attention to the element of strain and more to the treatment of foci of infection. On that basis, we are now using the salicylates and sodium cacodylate in all cases of cardiac failure associated with infection.

Pfalz,⁶ stimulated by the work of Budingen, recommended the use of glucose in the treatment of heart disease. Glucose being one of the most important sources of energy for the proper activities of the cardiac muscles, he recommends the infusion of 200 cc of 15 per cent glucose daily.

Although digitalis is the ideal remedy in auricular fibrillation, it can be given also in heart failure with marked edema, and is not necessarily contraindicated in cases of aortic regurgitation, and high blood pressure.

FUNCTIONAL CONDITIONS OF THE HEART

There is also a group of cases generally classed as heart disease because of the presence of one or more symptoms or physical signs of heart disease. These cases are termed functional conditions of the heart because, as far as we know, they are not associated with pathologic conditions of the cardiac structure. It is of great importance to differentiate these from diseased hearts in order that the activities of these patients may not be restricted and that the treatment of these cases may be directed to the underlying or associated condition and not to the heart. I refer, particularly, to those in whom a systolic murmur or an abnormal rhythm is found as an isolated symptom.

EFFORT SYNDROME

Another class of cases closely allied to these are those known as soldiers' heart, irritable heart, neuro-circulatory asthenia or effort syndrome. Warfield and Smith⁷ reviewed 275 cases with symptoms of irritable heart, consisting of breathlessness, exhaustion, giddiness, faintness, palpitation, headache, lassitude and irritability. A careful investigation of these cases disclosed seventy-eight cases of hyperthyroidism, ninety-four of tuberculosis, thirty-three, normal, forty-one, bronchial asthma, four, cirrhosis of the liver and four irritable heart. In the treatment of these cases the constitutional defect and the psychoneurotic tendencies must be corrected.

SUMMARY

1. The newer knowledge of the mechanisms of the cardiac rhythm, particularly as disclosed by researches

³ De Meyer. Tr. French Congress of Medicine 1920.
⁴ Wenckebach. Berl. klin. Wchnschr. 1914.
⁵ Frey. W. Berl. klin. Wchnschr. 55: 849, 1913.

⁶ Pfalz. Deutsch. med. Wchnschr. Oct. 23, 1913.
⁷ Warfield, L. M. and Smith, F. M. J. Lab. & Clin. Med. 5: 75 (Nov.) 1919.

with the electrocardiograph and polygraph, enables us to treat heart conditions more efficiently

2 Cardiac failure is usually associated with auricular fibrillation, which, when present, responds very satisfactorily to digitalis medication. Proper dosage of digitalis is necessary. The method of large dosage is advocated.

3 Quinidin has proved successful in more than 50 per cent of the cases of auricular fibrillation in restoring the normal rhythm.

4 The importance of infection as a factor in cardiac failure is too frequently overlooked, and the generally accepted theory of back pressure and cardiac strain should be abandoned in most cases.

5 Functional cardiac disturbances must be differentiated from serious organic disease, and treated accordingly.

6 Effort syndrome is usually not a cardiac disease, and the true diagnosis should be determined for its successful treatment.

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INFLUENCE OF VARIOUS SYMPTOMS IN THE PROGNOSIS OF PULMONARY TUBERCULOSIS

F B TRUDEAU, M D

SARANAC LAKE, N Y

In two previous communications¹ I have attempted to analyze the relative resultant effect of the presence, absence and location of râles, together with the importance during treatment of their increase and decrease, in the prognosis of pulmonary tuberculosis.

My purpose here is to determine the comparative value of certain symptoms in aiding us to predict for our patients something of their ultimate chances of recovery. This analysis, as in the two previous communications, is based on a study of one thousand consecutive admissions to the Trudeau Sanatorium during the years from 1907 to 1913. As twenty of these cases for one reason or another have not been included in these statistics, the tabulations are based on 980 cases. As a result of the follow up system employed at the sanatorium, we are able to tell the present condition, or, to be more exact, the condition in 1918, of all but less than 2 per cent of these 980 patients.

The terms "well," "living," "dead" and "unknown" have been used to describe the state of health of these 980 patients in 1918, or from five to eleven years after discharge, "well" referring to those patients who have been apparently well and working for a period of at least two years, and "living" including either those who have relapsed or those of whom we can give no further information except the fact that they are still alive.

MODE OF ONSET

The first point to be considered is the mode of onset of the disease in these 980 cases, and the significance of its various types as regards prognosis. In considering the five most common types of onset, namely, the catarrhal, the insidious, the pleuritic, the hemoptysic and the febrile, we note from Table 1 that the way the disease began plays little or no part in determining its

future course. In the five types of onset mentioned above, the "wells" vary only from 58 to 68 per cent, while the deaths vary from 20 to 27 per cent.

TABLE 1—ONSET AND COURSE

Type	No		%		Condition in 1918							
					Well		Living		Dead		Unknown	
					No	%	No	%	No	%	No	%
Catarrhal	475	48.26	289	61	70	15	110	23	4	1		
Insidious gradual	309	35.73	237	68	38	11	70	20	5	1		
Pleuritic	72	7.34	42	58	14	19	15	21	1	2		
Hemoptysic	50	5.1	33	66	5	10	12	24	—	—		
Febrile	10	1.03	9	60	2	13	4	27	—	—		
Gastric dispeptic												
Indigestion	8	0.82	7	88	—	—	—	—	1	12		
Glandular	5	0.51	3	60	1	20	1	20	—	—		
Family history +												
t b r n +	3	0.3	1	33	1	33	1	33	—	—		
Fistula in ano	2	0.2	2	100	—	—	—	—	—	—		
Pneumonia	2	0.2	1	50	—	—	1	50	—	—		
Total	980	100	624		131		214		11			

SPUTUM

Among our 980 patients, 591, or 60 per cent, showed tubercle bacilli in the sputum, 464 of these while in the sanatorium and 127 before coming.

The grave importance of these findings as regards prognosis is clearly shown when we realize that only 53 per cent of these patients whose sputum was positive are well and working, as contrasted with 79 per cent among the negative cases, while the mortality among the positive cases, from five to eleven years after discharge, is 32 per cent, as compared to only 6 per cent in the negative cases.

TABLE 2—RELATION OF SPUTUM TO PROGNOSIS

Type	No		%		Condition in 1918							
					Well		Living		Dead		Unknown	
					No	%	No	%	No	%	No	%
Negative	389	39.7	307	79	51	13	94	6	7	2		
Positive	591	60.3	318	53	79	14	190	32	4	1		
Total	980	100	625		130		114		11			

HEMOPTYSIS

Under the head of hemoptysis we have arbitrarily set the amount of one teaspoonful or more of blood as constituting a definite hemorrhage. Doubtless most of us are apt to consider the symptom as being of rather grave prognostic value in comparison to the absence of hemoptysis. The figures in Table 3 are surprising, for 61 per cent of the hemoptysic patients are well and working, as compared to 65 per cent of our non-bleeding patients, while the death rate is practically the same for the two types of cases, namely, 23 and 22 per cent.

TABLE 3—PROGNOSTIC VALUE OF HEMOPTYSIS

Type	No		%		Condition in 1918							
					Well		Living		Dead		Unknown	
					No	%	No	%	No	%	No	%
Negative	62	6.4	41	66	77	12	12	23	5	8		
Positive	344	3.1	210	61	33	10	78	23	23	8		
Total	406	100	251		110		114		11			

WEIGHT

Table 4 will illustrate the beneficial impact a gain in weight among our patients. More than 67 per cent of the weight averaging 81½ pounds

1 Trudeau, F B. Importance of Physical Signs in the Prognosis of Pulmonary Tuberculosis. *Am Rev Tuberc.* 4: 518 (Sept.) 1920.
Presence Absence and Location of Rales in the Prognosis of Pulmonary Tuberculosis. *J A M A* 77: 1326 (Oct. 22) 1921.

to only 28 per cent who lost weight, and approximately 5 per cent whose weight remained stationary. Among those who gained, the figures for the "wells" and "deads" are 67 and 20 per cent, respectively, contrasted with 57 and 27 per cent of those who lost weight. The forty-seven patients whose weight remained stationary did practically no better than those who showed a loss of weight.

TABLE 4—SIGNIFICANCE OF GAIN IN WEIGHT

Type	Condition in 1918									
			Well		Living		Dead		Unknown	
	No	%	No	%	No	%	No	%	No	%
Gain	657	67.04	441	67	81	12	127	20	8	1
Loss	276	28.16	157	57	42	15	75	27	2	1
Stationary	47	4.79	27	57	7	15	12	26	1	2
Total	980	100	625		130		214		11	

PULSE

The symptomatic importance in prognosis of the pulse is emphasized by Table 5. Cases are rated as "pulse positive" in this series in which a pulse rate of 90 or over persists for five consecutive days and diagnosis fails to reveal any other cause than tuberculosis. Sixty-nine per cent of the negative pulse patients are well and working, as compared to only 49 per cent of those having tachycardia, while only 16 per cent of the former class are dead, as compared to 38 per cent of the latter. The grave prognostic significance of rapid pulse is undoubtedly due largely to the fact that it is often accompanied by fever, which, as we shall see in Table 6, is the gravest of all symptoms that we have studied.

TABLE 5—IMPORTANCE OF PULSE

Type	Condition in 1918									
			Well		Living		Dead		Unknown	
	No	%	No	%	No	%	No	%	No	%
Negative	717	73.1	496	69	97	14	114	16	10	1
Positive	263	26.9	129	49	33	13	100	38	1	—
Total	980	100	625		130		214		11	

FEVER

Cases are here classified as "fever positive" when the patient's temperature was 99.5 F or over for five consecutive days, which could not be explained by any other cause than tuberculosis. By reference to the figures in Table 6 it will be noted that the percentage of "deads" among our febrile patients is nearly as great as the percentage of "wells", namely, 43 and 45 per cent, respectively, while of our afebrile patients 68 per cent were well and working from five to eleven years after discharge, and only 17 per cent had died.

TABLE 6—SIGNIFICANCE OF FEVER

Type	Condition in 1918									
			Well		Living		Dead		Unknown	
	No	%	No	%	No	%	No	%	No	%
Negative	809	82.6	548	68	110	14	141	17	10	1
Positive	171	17.4	77	45	20	12	73	43	1	—
Total	980	100	625		130		214		11	

SEX, FAMILY HISTORY AND STAGE OF DISEASE
ON ADMITTANCE

Although not strictly classified as symptoms according to the title of this paper, it might be of interest to consider from a prognostic standpoint the influence of

sex, family history and the stage of the disease on admittance to the institution.

Table 7 discloses that the proportion of males to females entering the institution is very nearly equal, as is the percentage of "wells" among the two sexes,

TABLE 7—INFLUENCE OF SEX

Type	Condition in 1918									
			Well		Living		Dead		Unknown	
	No	%	No	%	No	%	No	%	No	%
Male	522	53.27	329	63	50	11	133	25	5	1
Female	458	46.73	297	65	75	16	80	18	6	1
Total	980	100	626		130		213		11	

namely, 63 and 65 per cent, respectively, the males, however, have slightly the higher death rate in our series, with 25 per cent, as compared to 18 per cent of the females.

In considering family history in this paper we have reference only to the immediate family, namely, father, mother, brothers or sisters. It is of interest to note that 30 per cent of our cases have a positive family history, yet this fact seems not to have any prognostic

TABLE 8—INFLUENCE OF FAMILY HISTORY

Type	Condition in 1918									
			Well		Living		Dead		Unknown	
	No	%	No	%	No	%	No	%	No	%
Negative	690	70.4	441	64	90	13	153	22	6	1
Positive	290	29.6	184	63	40	14	61	21	5	2
Total	980	100	625		130		214		11	

value, as a study of the table reveals only a small variation in outcome as between our positive and negative family history cases.

Table 9 is indeed encouraging, for more than 78 per cent of our patients in whom the disease was incipient have resumed normal life, while less than 10 per cent have died. Even among those whose disease was moderately advanced, more than 70 per cent are alive,

TABLE 9—INFLUENCE OF STAGE OF DISEASE ON
ADMITTANCE

Type	Condition in 1918									
			Well		Living		Dead		Unknown	
	No	%	No	%	No	%	No	%	No	%
Incipient	303	30.92	275	78	43	12	28	8	6	2
Moderately advanced	612	62.45	300	57	84	14	173	28	5	1
Far advanced	16	1.63	4	25	3	19	9	56	—	—
Total	980	100	629		130		210		11	

although only 57 per cent of these have been restored to good enough health to allow them to work. It seems, indeed, gratifying that there are 25 per cent of "wells" among our far advanced cases.

TABLE 10—TOTAL RESULT

	Number	Per Cent
Well	625	64
Living	130	13
Dead	214	22
Unknown	11	1
Total	980	100

CONCLUSION

It might be interesting to note the present condition of these 980 patients, regardless of any symptoms,

except the fact that they were patients in the sanatorium. Two hundred and fourteen of these are dead, and eleven unknown. Of the deaths, 180, or 84 per cent, were caused by tuberculosis, and thirty-four from other causes, so that of 980 patients whose condition has warranted their admittance to the sanatorium, more than 75 per cent are well or living from five to eleven years after discharge, while practically two out of every three of them have been restored to earning capacity.

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PREVENTION OF PERITONEAL CONTAMINATION IN DRAINAGE OF ABDOMINAL ABSCESSSES

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If, in the course of an operation for appendicitis, a well walled-off collection of pus is found, it is a common practice to enter the abscess, even if it is rather large, and remove the appendix. This is, of course, done in the hope or belief that contamination of the general peritoneal cavity will not result. Unfortunately, in mesocolic, procecal and many retrocecal and subhepatic abscesses, it is impossible to enter the intraperitoneal abscess and remove the appendix without breaking up the protective peritoneal adhesions. Unless the abscess is large or so superficially situated as to reach the mural peritoneum, in which case the abscess cavity can be freely explored and drained without fresh soiling of uncontaminated peritoneal surfaces, it will hardly be denied that the exercise of great caution in the removal of the pus, for example, by way of an extraperitoneal canal to prevent additional peritoneal contamination, conforms to a surgical principle, the ignoring of which is fraught with danger. Therefore, if an appendiceal abscess can be drained without traversing a virgin peritoneal space, this should be done. In laterocolic extra-

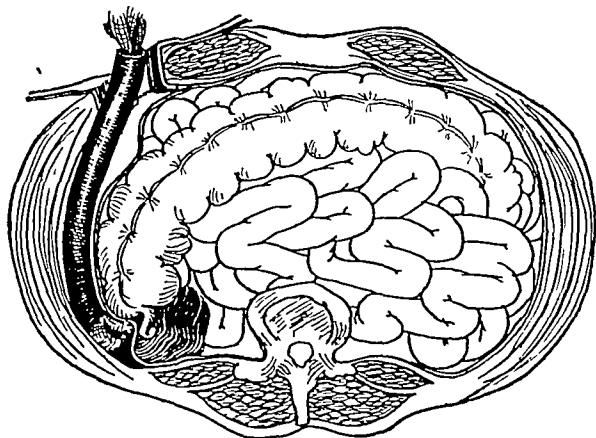


Fig. 1—Large cigaret drain passed between mural peritoneum and abdominal musculature. tuft of gauze on inner end pressing intraperitoneally against abscess wall causes rupture and evacuation of abscess.

peritoneal abscesses and certain large intraperitoneal abscesses this will be easy of accomplishment, moreover, it can be done in retrocolic, intraperitoneal and extraperitoneal abscesses of smaller size and more sequestered location, if the correct avenue of approach is followed.

In the accompanying illustrations, two methods of safe drainage of deep seated intra-abdominal abscesses

are presented. The first of the two methods to which it is desired to call attention has been used for many years, but too infrequently used by most operators, if I have been able to judge correctly by personal discussion of the subject with colleagues and by perusal of written treatises on this subject. The plan referred to is that of approaching a laterocolic or retrocolic

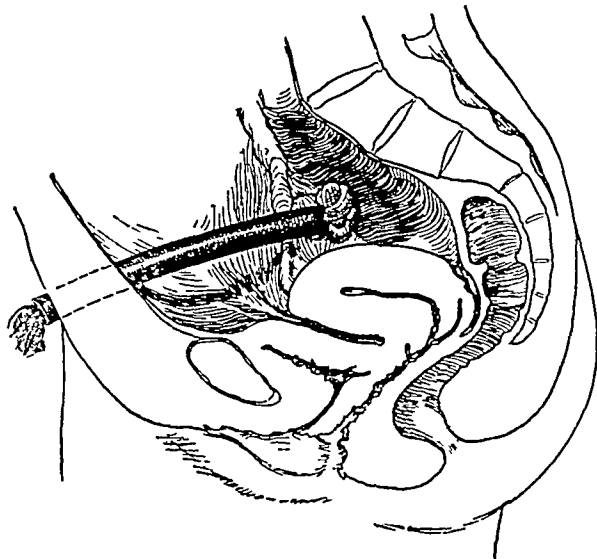


Fig. 2—Cigaret drain passed to intra-abdominal surface of pelvic abscess. pressure of tuft of gauze may be expected to cause disintegration and spontaneous rupture of abscess wall after drainage well of adhesions has been formed.

abscess by an entirely extraperitoneal route, that is, the incision is made lateral to the classical appendix incision, and extends only to the peritoneum. The parietal peritoneum is then peeled away from the musculature of the flank, and the abscess opened bluntly at the bottom of the extraperitoneal canal thus formed.

Given a well defined retrocecal abscess as large as a hen's egg or larger, a certain mortality will follow attempt to remove the appendix and wipe out the pus through a ventral peritoneal incision. On the other hand, there should be practically no mortality following the opening of the abscess through an extraperitoneal avenue of approach. It is not, however, my object here to discuss at length any method of opening an intra-abdominal abscess at the time of operation, the foregoing reference has been made because the measure already described leads to another and more important consideration.

About fifteen years ago, in attempting to reach a retrocecal abscess as described above, it was found easily possible to peel off the peritoneum down to a position alongside the cecum, but the exploring finger found no ulcerated area through which a puncture could be made without danger of admitting virulent pus into the free peritoneal cavity. Therefore, the space alongside the cecum was loosely packed with two strands of gauze, between which a large rubber drainage tube was passed, the ends of the gauze and the drainage tube extruding at the wound in the flank. About eight hours after the operation, the abscess broke spontaneously, and a large amount of pus was discharged from the wound. The size was removed gradually, and the tube was removed after 12 days. There were no suppuration, nor has the abscess, nor has the

citis symptoms nor any intra-abdominal trouble of any kind in the years that have lapsed since the operation

I have often dealt with abscesses consequent on appendicitis in this manner, and have been surprised to note how completely this plan of utilizing suction and chemotaxis has removed every vestige of infection in and about the appendix, and to observe how free patients thus operated on have remained, so far as any postoperative complications are concerned

Much less frequently it has been found, after opening the abdomen and peritoneal cavity itself in the usual manner, that large appendical abscesses deeply situated could not be opened and drained safely in the ordinary transabdominal manner, that is, it could not be done without extensive contamination of the general peritoneum. Therefore, in such cases a very large cigaret drain with a protruding tuft of gauze was placed on the abscess, the abdominal wound being closed around the distal end of the tube. It has been the almost invariable rule that rupture of the abscess has occurred within forty-eight hours, but not, of course, until the canal established about the tube was sealed off by peritoneal adhesions. Thus, a transabdominal but to all purposes extraperitoneal avenue of drainage was constructed. It seems clear enough that adhesions and exudate about the inner end of the tube soften as the result of the dynamic effect of pressure, suction and chemotaxis focalizing the infection about the inner end of the tube

In cases of acute appendicitis with a definite resisting mass in the right groin, prudence directs that the flank incision be made cautiously until the peritoneum is reached. If an abscess is opened before the peritoneum is reached, it will of course be very easy to provide ample and safe drainage. If, however, the peritoneum is found to be intact and movable over the underlying mass, the plan of peeling the peritoneum loose from

toneum, the abdominal cavity should, of course, be entered and the appendix removed. If, however, an abscess is felt under the intact peritoneum, there is excellent reason for avoiding entrance into the free peritoneal cavity. In such an instance the abscess can be punctured low with the gloved finger and drained

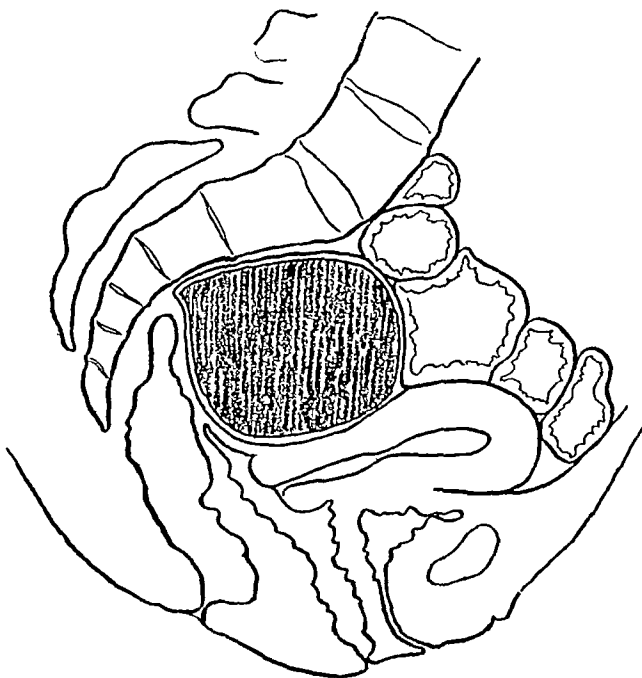


Fig 4—Pelvic abscess in position favorable for vaginal puncture as distinguished from abscess situated high and difficult of access, as in Figure 5

through the space between the peritoneum and musculature. This offers an avenue of ample and safe drainage. If, however, the low puncture cannot be made without considerable risk of contamination of the general peritoneal cavity, then the tampon of gauze and the drainage tube introduced deeply alongside or under the abscess will induce spontaneous rupture with safe drainage in practically every case.

Rather extensive observation has shown, moreover, that in cases presenting difficulty in determining whether or not abscess really existed, ample seropurulent drainage has been attended or followed by disappearance of the mass and complete recovery of the patient. Therefore, in view of the relief afforded by the suction drain in such cases of doubt, the wisdom of opening up such a large mass and searching for the appendix in late acute or subacute cases may be doubted. This, however, does not imply that the appendix should not be removed in practically every case that is seen early enough.

It has transpired in my experience that the abdomen has been opened for the removal of pus tubes or confluent salpingo-oophoritis, whereas the principal seat of pus proved to be external to the peritoneum, that is, the intra-abdominal extraperitoneal pelvic abscess was situated so high up in the pelvis as not to admit of easy diagnosis by bimanual abdominal and vaginal examination. Such an abscess may occur unassociated with marked infection of the tube and ovary. An abscess so situated cannot always readily be reached through a vaginal puncture, and the folly of opening intra-abdominally such an abscess filled with hot pus at the time of the abdominal operation is, or should be, generally appreciated. The employment of the large

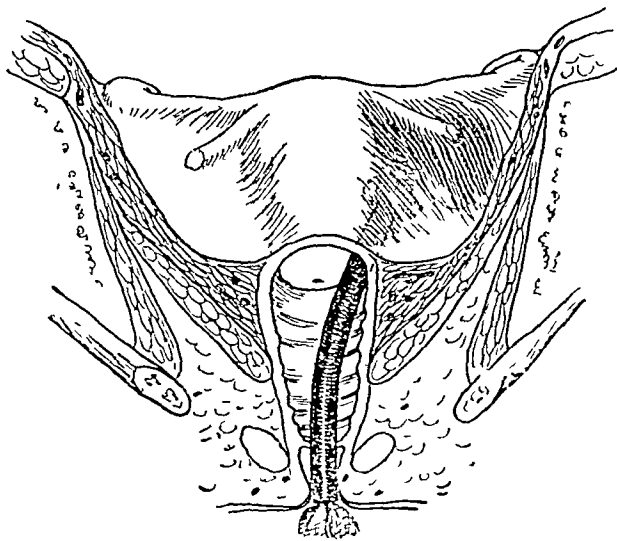


Fig 3—Large cigaret drain passed through incision in vaginal vault for purpose of inducing rupture of a high pelvic abscess

the muscular abdominal wall and seeking a low point of puncture has much to recommend it. In such cases, after the peritoneum has been reached, a thorough exploration with the gloved finger should be made to determine whether a true abscess exists or whether the mass consists merely of the enlarged appendix, clumps of omentum and exudate. If no well defined fluctuating abscess is palpable through the intact peri-

cigaret drain with the gauze tampon at the inner end will militate strongly on the side of safety, for, if the large rubber tube filled with gauze is placed against the intra-abdominal side of the peritoneum covering the pelvic abscess, the outer end of the tube projecting from the ventral wound, a deep well made up of protecting adhesions will quickly form about the tube, and as a rule within a day or two the abscess will rupture spontaneously and discharge through the walled off canal without contamination of the general peritoneum. It should be admitted that if the tubes and ovaries are definitely infected and are not removed at the time of the exploration because of the danger of rupture of the abscess, it may occasionally be necessary after the abscess has cleared up to reopen the abdominal wound for the removal of the infected adnexa. Certainly, this is not brilliant surgery, but brilliance in surgery may be said to belong to another day, and many good surgeons have expressed abomination of the word brilliance as applied to their work.

The procedure described may be said to make for a tedious convalescence. That is true, and a tedious convalescence is a dull affair. It is much less brilliant than a funeral, but more satisfactory to the patient and surgeon. There are, no doubt, some who will look on the proposal given as one of atrocious demerit, but among these there will hardly be any who have had extensive experience with the plan.

A few times in my experience when attempts have been made to reach a pelvic abscess through a vaginal puncture it has appeared that further dissection about the uterus might result in a perforation of the pelvic peritoneum, and in such instances the tampon tube has been passed into the pelvic cellular tissue through the wound in the vaginal vault with the view of awaiting spontaneous rupture as the result of the dynamic effect of pressure, suction and chemotaxis. The rupture has almost invariably occurred after a few hours with ample drainage and eventual complete cure, except in cases of

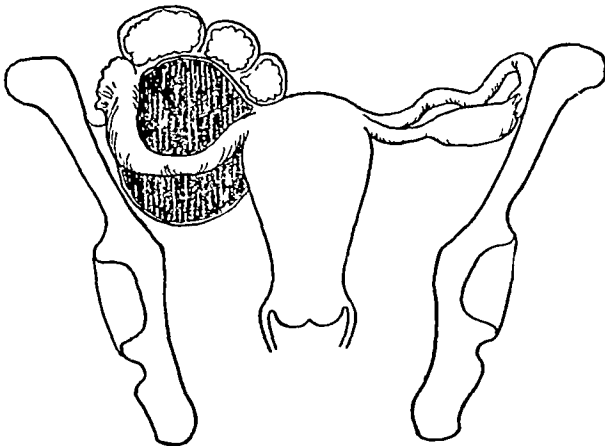


Fig 5—Pelvic abscess situated high up in the broad ligament often difficult to open safely by vaginal puncture unless quite large

pelvic abscess attended with pyosalpinx or other associated pathologic changes, in such instances it being necessary later to remove the infected uterine adnexa through the abdomen. Perhaps many surgeons have made use of the procedure here described. They are presented for the reason that they are not generally employed in the relatively small percentage of cases suitable for their application.

In 1921, Ochsner¹ reported a case of abscess of the pancreas, interesting in this connection.

A woman, aged 48, with symptoms of ulcer of the greater curvature of the stomach which later proved to be malignant, was subjected to an exploratory laparotomy which demonstrated an indurated mass 5 cm in diameter in the posterior wall of the stomach attached to the tail of the pancreas, which was swollen to the size of an orange about 10 cm in diameter. This swelling was congested and contained fluid. Evidently

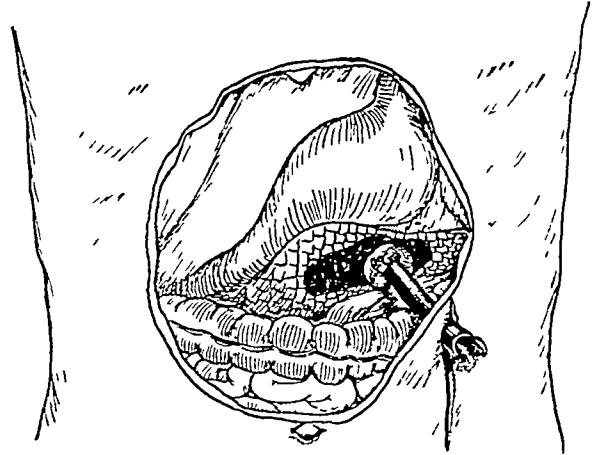


Fig 6—Postponed rupture of abscess of pancreas. Large cigaret drain passed down to abscess and abdomen closed. Spontaneous rupture occurred a few hours later after protective adhesions had formed about the tube. (Case of Dr. A. J. Ochsner.)

an abscess had formed in the tail of the pancreas from an infection originating in the perforated gastric ulcer.

In order to determine the condition more perfectly, an opening was torn in the transverse mesocolon, and the abscess was found strongly adherent to the posterior wall of the stomach while the posterior wall of the pancreas was quite free. Great care was exercised in the manipulation of the pancreas not to rupture the abscess. An incision was then made in the left flank immediately below the last rib 5 cm long, and a pair of forceps was passed forward, guided by one hand, in the abdominal cavity to a point behind the pancreas. The blades of the forceps were spread widely open in order to establish a broad passage. The space behind the pancreas was then loosely packed with gauze, in the middle of which was placed a large rubber drainage tube. The gauze and the drainage tube were passed out of the wound in the flank, and two cigaret drains were added and carefully placed behind the pancreas. The tear in the mesocolon was then repaired and the abdominal wound was closed. Five days after the operation the abscess broke spontaneously, and a large amount of thick pus escaped. The gauze and the cigaret drains were removed gradually. The rubber tube was left in place for two weeks when the discharge had been greatly reduced. The tube was then removed and the wound healed in two more weeks.

¹ Ochsner, A. J. Paper read before American Surgical Association, Toronto, 1921.

Ossification of Arteries—Ossification of the arteries probably occurs in about 6 per cent of the vessels of the extremities which show severe arterial degeneration. It is more than twice as frequent in these vessels as in the aorta and cardiac valves. Ossification of the arteries takes place usually in the medial coat, though occasionally in the intima also. It follows medial calcification with or without endarteritis, but is most common where the two are combined. It is usually not associated with cartilage, of metaplasia of fibroblasts of the adventitia, or of the calcific plaques.—*York Path Soc* 22:115 (Jan-May) 1921.

CLINICAL EXPERIENCE WITH KOLMER COMPLEMENT FIXATION TEST FOR SYPHILIS*

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AND

S. S. GREENBAUM, M.D.

PHILADELPHIA

More than fifteen years has elapsed since Wassermann and his collaborators first published their epochal work on the complement fixation test, since then no biologic test has received a more searching analysis. Aside from the volumes written on its original technic, numerous attempts at its refinement, with varying success, have been made (Noguchi, Hecht-Weinberg, Bauer modifications, etc.) Today no one questions the value of its aid in the diagnosis of syphilis. However, a considerable percentage of physicians still continue to regard this test with some degree of suspicion, and perhaps properly so, since reports on the same serum, when examined in different laboratories, are very often contradictory. This discrepancy may result from the carelessness or inexperience of the serologist, or it may be due to the fact that almost every serologist has introduced into the technic minor changes of his own. This has led to a marked diversity of opinion on almost every step of the test, a fact well known and deplored by all syphilologists. Because of this, the need for a standardized technic becomes at once apparent. With a standardized technic that is both specific and more sensitive than the older tests, we would possess a more reliable aid, not only in the diagnosis but likewise in the treatment of syphilis. A complement fixation test that would give no false positives, and fewer false negatives, would be a decided step forward.

With this end in view, Kolmer began an intensive study of every phase of the complement fixation test, requiring almost six years to complete. In January, 1922, he¹ published his final results, claiming for his new technic practical specificity, increased sensitiveness and, from the laboratory point of view, economy, accuracy and simplicity of performance. Almost three years has elapsed since Kolmer's technic was introduced into our clinic. Its merits from a clinical point of view were discussed by Schamberg and Klauder² in a previous paper from this clinic and from private practice.

Since this publication, four other papers on the Kolmer test have appeared, and there has been a remarkable concordance of opinion among all of the writers. It is a significant fact that although all of them credit the new test with being distinctly more sensitive than the older methods, not a single instance of a false positive has been observed by any of them.

Shivers³ employed the Kolmer test in 320 cases, and expressed the opinion that "the new method marks a distinct and valuable advance in the serum diagnosis of syphilis, being much more sensitive and at the same time yielding no falsely positive reactions."

Harper and Curtis⁴ tried the Kolmer test in 120 cases, and they fully corroborate the clinical findings of

Schamberg and Klauder. They write "We regard the Kolmer modification of the Wassermann test as a most important advance, and one calculated to shed added light on the detection of obscure syphilis and in the ultimate determination of the factors of treatment."

Kilduffe⁵ reports the results of a comparative study of 1,014 serums with the Kolmer test and the older routine method, and concludes that the Kolmer method possesses greater delicacy, flexibility and elasticity, and permits of quantitative reading. He did not observe any nonspecific reactions. Kilduffe concludes that Kolmer's method presents by far the most acceptable technic yet proposed for adoption as a standard method.

Palmer and Gibb⁶ report on the use of Kolmer's test in 329 patients, strongly commend it, and conclude that it shows greater sensitivity and specificity and gives fewer anticomplementary reactions.

The opinions hereafter expressed are based on a study of the histories of more than 400 syphilitic patients on whom more than 4,000 tests were performed.

From the standpoint of the syphilologist, the value of a complement fixation test depends, in the main, on two factors: (1) specificity (specific in the sense that it must indicate the presence or absence of syphilis, since it is not a specific test in the biologic sense), which is of primary importance, and (2) sensitiveness. The latter is particularly of value for the aid it may give in the early diagnosis of a chancre, in endosyphilis and in the control of treatment, as it is on this test alone that the syphilologist must later depend for his information as to the efficacy of treatment.

SPECIFICITY

The recognition of the specificity of a test for syphilis depends, on the one hand, on a positive outcome in the presence of the disease, (corroboration by the finding of *Spirochaeta pallida* or the presence of unquestionable clinical phenomena), and, on the other hand, on its negative outcome in the absence of the disease in question.

It is generally known that the original Wassermann test could not be considered absolutely specific for syphilis, since positive results were obtained in certain other disease processes and that, more important still, negative results occurred in the presence of known syphilis. With the older technic, positive reactions in the presence of disease processes other than syphilis were, however, rare (less than 1 per cent),³ but with the new technic our records tend to indicate that this does not occur, and in this experience we are confirmed by other observers. With respect to this point, Case 1 is cited because one of the few conditions in which positive reactions occur with the old technic is nodular leprosy.

CASE 1—V. C., a white woman, aged 38, born in Italy, whose condition was diagnosed as nodular leprosy, the diagnosis being confirmed by microscopic examination, was referred to the genito-urinary clinic of another hospital for antisyphilitic treatment because of a 4 plus Wassermann reaction nine months before we saw her. During that period she received eight intravenous injections of neo-arsphenamin and fourteen intramuscular injections of mercuric salicylate. The treatment had no effect on the numerous leprosy nodules or on four Wassermann tests at various times during this

* From the Research Institute of Cutaneous Medicine and from the Polyclinic Hospital.

1. Kolmer J. A. Am J Syph G 64:74-82 (Jan.) 1922.
2. Schamberg J. F. and Klauder J. V. M. Clinics N. America 5:667 (Nov.) 1911.

3. Shivers C. H. D. The Clinical Value of the Kolmer Complement Fixation Test for Syphilis. Arch. Dermat. & Syph G 3:4 (Sept.) 1922.
4. Harper J. and Curtis L. F. The Kolmer Modification of the Wassermann Test. U. S. Naval M. Bull. November 1922 p. 757.

5. Kilduffe R. A. The Kolmer Modification of the Wassermann Reaction. Arch. Dermat. & Syph G 709 (Dec.) 1922.

6. Palmer L. J. and Gibb W. F. Experience with the Kolmer Quantitative Complement Fixation Test for Syphilis. Arch. Dermat. & Syph G 739 (Dec.) 1922.

treatment, which were each 4 plus. When first seen by us, in November, 1921 the patient's husband and five robust children were serologically tested, with the old technic, with negative results. A Kolmer test at this time on the patient's blood was negative. Dec. 20, 1921, the blood of the patient and of her new-born sixth child were negative with the Kolmer test.

When we come to study the question of negative reactions in known syphilitics, we find that they are fairly common, even with the most careful performance of the test. It must be recognized, of course, that all biologic tests, even when well performed, have their limitations, and the Wassermann test is no exception to the rule. Craig⁷ agrees with most observers in estimating that fully 10 per cent in primary, 5 per cent in secondary and 12 per cent in tertiary syphilis yield negative results with the Wassermann test as ordinarily performed. This may not be so important in the primary as it is in the secondary and tertiary stages, because in the first instance we possess the aid of the dark-field illuminator. These negatives are due to a lack of sensitiveness on the part of the old technic. On the other hand, the results obtained with the new technic are astonishing. In our series, eighty-four patients presented secondary, sixty-three tertiary, twenty-eight neurosyphilitic and twelve congenitally syphilitic lesions, diagnosed clinically and therapeutically, there were twelve primary lesions, the duration of each of which was more than fourteen days. All of these patients gave positive reactions by the Kolmer method.

SENSITIVENESS

No matter how sensitive a biologic test may be, its outcome depends on the presence of the reacting substances necessary to it. No complement fixation test can always yield positive results in the presence of the particular disease sought for, and this is just as true in syphilis as it is in tuberculosis, gonorrhea or sporotrichosis. The reason for this is that the complement fixing substance termed "reagin" by Neisser is not present at all times during the course of the infection. Furthermore, in syphilis at least it may be present in one of the body fluids (spinal fluid) and not in another (blood). Again, as is well known, the disease may be and often is well on its way to the secondary stage before reagin apparently appears in the blood (only about 40 per cent of the cases are positive in the first week of primary syphilis). Craig and others have likewise shown that, during the course of syphilis, reagin varies in amount from day to day in an inexplicable manner, and may even entirely disappear for from twenty-four to seventy-two hours after the ingestion of large amounts of alcohol. It is possible that this negativity may occur as a result of other as yet unknown influences. As a matter of fact, all syphilologists know that this apparent absence of reagin (which is followed by a reappearance at a variable period later) is often evident after a few treatments with antisyphilitic drugs, particularly the organic arsenicals. The latter fact should be emphasized, as an inexperienced physician may be misled into believing that cure has taken place. If all physicians would recognize that, once the Wassermann test has become positive in primary or secondary syphilitics, an adequate and fairly definite amount of treatment is required to reverse it and hold it negative for at least a two year period, then the pathologic changes of the

tertiary and endosyphilitic phases of syphilis would be largely avoided, after these changes have taken place, no amount of treatment will remove the sclerosed structures following chronic syphilitic infiltrates. It is possible that some of the negative reactions in known syphilitics are so either because there is an actual absence of reagin, or because it is present in too small a quantity to be detected by the older and less delicate method. Our studies with the new test incline us to the belief that, in most instances, the latter is the correct explanation. In virtually all cases, we have found the new test far more sensitive than the older three antigen technic.

Schamberg and Klauder, Shivers, Harper and Curtis, Kilduffe, and Palmer and Gibb have already shown that with the new technic the complement fixation reaction becomes positive earlier in primary syphilis than it does with the old test. In the present series, the number of primary lesions seen early (before the tenth day) was too small to form the basis for the expression of an opinion. However, in a number of the primary lesions, the amount of reagin detected was greater with the new technic than with the older three antigen tests. The value of this is apparent, as many primary lesions are negative to the dark-field illuminator as the result of previous local treatment which has caused destruction of the surface spirochetes, and generally negative serologically because, as has already been stated, the time of appearance of reagin in the blood varies with the individual and the sensitiveness of the test.

The quantitative character of the new test enabled us better to follow the gradual diminution in reagin over a much longer period of time during the course of treatment than has heretofore been possible. Since it is in large part on the patient's serologic status that we depend for our knowledge of the efficacy of treatment, this fact alone gives the test a value not to be underestimated. In patients whose Wassermann reaction was persistently positive with the older technic, it was likewise so with the Kolmer test and usually in higher degree, many negative reactions after treatment with the old test were still positive with the new test.

The sensitiveness of the Kolmer test was particularly of value in the patients with active tertiary lesions. In some of these, the older three antigen technic gave negative reactions, whereas, with the new test, the reaction was positive. Some of these patients had had one or more negative reports from other laboratories, with resultant improper diagnosis and treatment. Only recently, we were again enabled to confirm our clinical diagnosis in a man with a nodular syphilid about the mouth, of a year and a half's duration, who had been treated during that time with salves, crustics and the roentgen ray because his Wassermann test had been negative.

In patients with a recurrent positive Wassermann reaction after treatment, we have observed that the reappearance of reagin is detected sooner by the new quantitative test. In common with other syphilologists, we have always regarded a single report of a weakly positive reaction as inconclusive particularly in asymptomatic cases. In many of these symptomatic and asymptomatic endosyphilitics, a higher reading with the new technic gave us greater assurance of the correctness of the diagnosis.

Space will not permit a report of a few selected cases to demonstrate the superiority of the new test.

⁷ Craig, C. F. Variations in the Strength of the Wassermann Reaction in Untreated Syphilitic Infections. *J. A. M. A.* 62: 1237 (April 18) 1914.

ILLUSTRATIVE CASES

CASE 2—R P, a man, aged 45, contracted syphilis twenty years ago. He had inadequate and indifferent treatment. The pupils were sluggish and unequal, he was markedly nervous, and had a swelling in the metatarsal bones of one foot. He had recently had three negative blood Wassermann reactions in three different cities. As a result, no treatment was administered. A repetition of the test with the alcoholic extract of syphilitic liver, the acetone-insoluble lipoids and the cholesterolized antigen by Dr. Kolmer was likewise negative. With the Kolmer test, however, it was 4+, 2+, —, —, —, with the graded strengths of serum.

The spinal fluid was likewise negative with the old three antigen test, but with the Kolmer quantitative test it was 4+, 3+, —, —, —.

Intravenous treatment with neo-arsphenamin was carried out with the resultant disappearance of the swelling of the metatarsal bones and a general improvement in the patient's nervous and physical condition.

This case illustrates in a striking manner the importance of employing a sufficiently sensitive test.

CASE 3—G C, an old person with neurosyphilis, presented fixation of the pupils and a negative Wassermann reaction with the alcoholic extract of syphilitic liver and acetone-insoluble lipoids, and negative with the cholesterolized antigen, but with delayed hemolysis. The Kolmer quantitative test was 4+, 4+, 3+, —, —. The contrast here is pronounced.

CASE 4—J H was an unrecognized neurosyphilitic patient with fixed pupils. The old three antigen test negative. The Kolmer test was 4+, 3+, 3+, —, —. Without the latter test, treatment might have been suspended.

CONCLUSIONS

1 The Kolmer complement fixation test is distinctly more sensitive than the routine three antigen method.

2 With its employment, the serums of syphilitic subjects are slower in becoming negative, thus insuring more adequate treatment. The test detects relapsing positives at an earlier period than the older method.

3 The quantitative character of the test enables the physician to determine more accurately the serologic status of the patient, and to gauge the influence of treatment.

4 In a fairly large experience we have never observed a false positive by the Kolmer test.

5 We regard the Kolmer test as an invaluable advance in the serologic study of syphilis.

1922 Spruce Street—1714 Pine Street

Vitamins—Have you heard the story of McCollum's calves? It reads like a fairy tale. In the year 1906, three groups of heifer calves were selected and placed on diets chemically equal: the fat, protein, and carbohydrate contents of the three were identical as were, consequently, the caloric values. One group was fed on corn, another on oats, and the third on wheat—the complete plant, stalk, leaves, and kernel being used in each case. The calves grew and thrived and only minor differences were noted until they were grown and produced young. The cows that had been fed on a wheat diet from babyhood produced calves that were born dead and weighed only 40 to 50 pounds, while a normal calf at birth weighs from 75 to 80 pounds. The oat-fed cows brought forth calves practically normal in weight, but these too were born dead. The corn-fed cows produced calves that were normal in weight and that were on their feet within a few hours. Considered from a casual point of view, these results would seem to indicate the superiority of corn above other cereals. The real point of advantage lay in the larger amount of green leaves and stalk in the corn diet, rather than in the grain itself—Moore, *Nutrition of Mother and Child*, J. B. Lippincott Company, 1923.

TRANSFUSION IN PURPURA HEMORRHAGICA

RALPH C LARRABEE, MD
BOSTON

During the last few months the blood service at the Boston City Hospital has dealt with a number of cases of purpura hemorrhagica of a severe and acute type. Our methods of treatment have probably been about the same as those of other clinics, but a survey of the literature would seem to indicate that our use of transfusions has been more persistent and vigorous than is common elsewhere. Certain determining factors bearing on this subject, while they are common knowledge among students of the hemorrhagic diseases, still lack the universal recognition that the urgency of the disease demands. The object of this brief report is to emphasize these facts and to illustrate their bearing on the subject of transfusion.

DETERMINING FACTORS

1 Hemorrhagic purpura is the result of a numerical decrease of blood platelets. It makes no difference whether we are dealing with a primary or an idiopathic case, whether the condition is secondary to infection, or whether it is part of a primary general aphasia of the marrow or a replacement aplasia, as in some leukemias. If platelets are sufficiently low, the hemorrhagic symptoms will be present, intermingled with those of the causative condition, just as lack of platelets will be evident in the blood picture, however complicated it may be. There is even experimental evidence that when the platelets are overpromptly destroyed after entering the blood stream, the same phenomena will occur.¹ One may venture a prophecy that the name "purpura hemorrhagica" will some day disappear, or be relegated to that of a symptom-group resulting from thrombopenia.

2 The life of a platelet in the blood stream is only a few days—certainly not more than a week.

3 There is a strong tendency toward recovery, or at least toward remission. Of course, this statement does not apply to the thrombopenia of aplastic anemia or of acute leukemia, and in the secondary group of purpuras the tendency and duration are more or less dependent on the underlying infection. But most of the so-called idiopathic cases of purpura hemorrhagica do tend to recovery, although the patients are apt to suffer intermittent relapses, the later attacks being sometimes severer, but commonly milder than the earlier ones.

OBJECTS OF TRANSFUSION

The objects of transfusion are, as in all hemorrhagic diatheses, twofold. First, to mitigate the anemia. This is not very important in the disease under consideration, except in severe and advanced cases. In straight purpura hemorrhagica there is no trouble with the red cell forming function of the marrow, and once the bleeding has ceased, recovery from anemia is usually prompt and satisfactory. The second and more important object of transfusion is to control the bleeding. This implies supplying enough platelets to permit natural hemostasis to occur.

The primary object of transfusion being to increase the number of platelets in the patient's blood, the question arises as to how largely the count is affected by this procedure. In our experience, a single transfusion

seldom increases the patient's platelet count by more than 20,000. Obviously, it is desirable to give large transfusions. The patients are mostly young persons, with normal hearts, and there is little danger from overtransfusion. They can safely and advantageously receive as much blood as the donors can safely supply. We do not, therefore, advise small transfusions.

For the same reason we feel strongly that citrated blood is greatly inferior, in this disease at least, to whole, unmodified blood. In citrate transfusions, large numbers of platelets stick to the gauze filter and to the glassware, as can easily be proved by staining scrapings from the latter. To show how considerable the loss is, 0.1 per cent of sodium citrate was added to the blood of a patient whose platelet count was 102,000. After a half hour the citrated blood contained only 18,000 platelets. The loss is very much less if paraffined tubes are used. For example, a donor's platelets were 280,000 immediately before a transfusion by Kimpton's method. A count of the platelets in a small quantity of blood left in the tube at the end of operation gave 220,000. I am aware of the paradoxical fact that, while citrate is used to prevent coagulation of blood outside the body, its action when injected is to shorten coagulation time, and that it has been used clinically for this purpose, but this has little to do with purpura hemorrhagica, in which coagulation time is not impaired. Indeed, there is reason to believe that citrate injections act by destroying platelets, thereby releasing substances that assist coagulation.² I would not go so far as to say that citrate transfusions should never be used in the disease under consideration—some good observers have had success with them. But both theory and experience seem to point unmistakably to the superiority of other methods when they are available. Perhaps direct, arm-to-arm transfusion by the original Crile technic has theoretical advantages, but for practical uses paraffined tubes are, of course, preferable. All of our transfusions have been done by the Kimpton-Brown method.

Another point is that usually more than one transfusion will be needed. Indeed, the first one may have no visible effect. A brief consideration of the facts already noted readily explains this. Hemorrhages generally begin when the platelets have fallen to some fifty or seventy-five thousand. By the time the patient comes to the table for this first transfusion, they may have fallen so far below this number that a single transfusion, however large and however efficiently performed, will not put them back to the point at which bleeding will be controlled. Several may be needed and, in view of the short life of the platelet, the intervals must be brief—not more than forty-eight hours. Even when the hemorrhages have been controlled, there is no certainty that they will not recur. If they do, transfusion should be repeated at once without reference to the presence or absence of anemia. Nothing is gained by delay, especially if the platelet count shows steady diminution; control will be more difficult each day one waits. Only boldness and persistence in transfusing will save life in severe cases. One cannot begin to feel safe until the patient has gone on without bleeding for a period considerably beyond the life of a platelet—say, ten days.

Let me add that the platelet count is not a very good criterion. Platelet counting is at best inaccurate. After cases have gone on for a month or so, they are apt not to run true to type, and we have been much

perplexed by a discrepancy between our counts and our stained smears. The former may show more than 100,000 platelets, and yet they may be almost absent from the smears. The presence or absence of bleeding from the nose and gums is a more reliable guide.

REPORT OF ILLUSTRATIVE CASES

CASE 1—F. C., a man aged 60, seen in consultation with Dr. F. H. Hubbard of Taunton, had been bleeding three weeks from the nose and gums, and the skin showed small purpuric spots and a few deeper ecchymoses. The bleeding time was fifteen minutes, no platelets were recognizable in the smears. Six days later, transfusion of 500 cc. was done by the paraffined tube method. Next day the patient was admitted to the City Hospital with moderate anemia and a platelet count of 44,000 still bleeding slightly from the nose. After an interval of five days, a second transfusion was done by Dr. Kimpton again without much benefit. More or less oozing continued for a week when a third transfusion (600 cc.) was done. Bleeding then stopped completely but in six days a fourth transfusion (500 cc.) was required. The platelets fluctuated from 28,000 to 44,000 for the next fortnight and as might be expected there was a little bleeding from time to time. Then the platelets began to rise steadily, and the hemorrhagic tendency ceased. Now eleven months from the onset the patient is apparently well. His last platelet count was 232,000 and the bleeding-time two and one half minutes. Smears show plenty of platelets. He works steadily as a millwright, and though he often gets scratches and slight injuries there is no tendency to abnormal bleeding.

CASE 2—L. C., a boy aged 8 had had nosebleed for five days. There were also skin hemorrhages of the two types almost always seen in this disease—fine superficial purpuric spots and larger and deeper ecchymoses, the latter probably resulting from slight injuries. The platelets were 70,000 and there was moderately severe secondary anemia with leukocytosis. The nosebleed stopped immediately after a transfusion of 450 cc. by Dr. Kimpton. Two days later with a platelet count of 76,000 there was a nosebleed and on the fourth day another so severe as to require a second transfusion (550 cc.). The next day the platelet count was 240,000, though few were visible in the smears. This sudden increase, far beyond what could have resulted from transfusion can only mean a sudden resumption of the function of platelet making by the marrow. Needless to say there were no further hemorrhages and he was shortly discharged with a count of 348,000, and a smear showing 'loads of platelets'.

CASE 3—A. M., a girl aged 17 had bled from the nose and gums for three weeks. The face and ankles were puffy and there were numerous ecchymoses and purpuric spots. There was rather severe secondary anemia, the platelets numbered 58,000, the bleeding time was twenty-two minutes. Next day transfusion (600 cc.) was done by Dr. Loder. The platelets rose to 80,000 but the bleeding continued from the transfusion wound as well as from the nose. In forty-eight hours a second transfusion (500 cc.) was done with little benefit. The third and fourth transfusions, of 500 and 600 cc., respectively were done after intervals of three days and the fifth (550 cc.), after two days. Two days more and again she had a nosebleed and vomited some bright blood the platelets being 52,000. Five days after the fifth transfusion they had fallen to 34,000, and hemorrhages of increasing severity required a sixth transfusion of 500 cc. after an interval of ten days. The platelets then increased to 112,000 and there were no more hemorrhages. In the meantime however she developed acute nephritis and pericarditis with effusion. About a month after the last transfusion there was vomiting and intense abdominal pain with tenderness and rigidity in the lower right abdomen. In view of her serious condition and the existence of hemorrhagic disease operation was deferred and the acute symptoms so cleared up. She continued, however, to have a 'septic' temperature and finally died nearly two months after the last transfusion. Necropsy showed gangrenous appendix, abscess cavity, and fibrin. Marrow showed a normal

COMMENT

These three cases have been selected because they illustrate what may be expected of bold and persistent transfusion in typical acute cases of a distinctly desperate type. Not all fall into this category. We have had one patient who recovered promptly and completely, though perhaps not permanently, after a single transfusion. Another was a chronic case, which ran quite a different course. Each transfusion sufficed to prevent bleeding for several weeks. After four or five recurrences at intervals corresponding to the menses, the tendency seemed to cease, and she was discharged apparently well. Some of these chronic and persistent cases, after a while, become quite bizarre and atypical. What, for example, can be said of a boy, aged 2, who developed perfectly typical purpura hemorrhagica while under treatment for diphtheria in the contagious department? After several transfusions his bleeding was controlled, only to relapse repeatedly. After nineteen months, during which Dr Kimpton did twenty-eight transfusions and the family's stock of patience and money was exhausted, he died. During the greater part of his illness the platelets were above normal, sometimes over a million. The coagulation time was never more than slightly increased. Such cases are hard to explain, and leave one with the feeling that there is much to be learned about hemorrhagic diseases.

912 Beacon Street

PERIRENAL TUMORS

REPORT OF CASE

ROBERT V DAY, M D

LOS ANGELES

In defining paranephritic tumors, Lecene¹ states that "this term applies to such retroperitoneal neoplasms as seem to have intimate anatomic relations with an otherwise normal kidney and which appear to have developed at the expense of either the fibrous capsule or the cellulo-adipose covering of the kidney."

REPORT OF CASE

History—Mrs B K, aged 43, admitted to Los Angeles County Hospital, Oct 4, 1921, complained of a large tumor mass in the right kidney region, pain, constipation, slight nocturia, nausea and vomiting and loss of weight and strength. About March 1 1921, the patient first noticed dizzy spells and vomiting, which were severe at times. This kept up until about the first of August when she noticed a mass forming in the right of the abdomen, which rapidly enlarged into the present large palpable tumor. The family history was irrelevant.

Examination—There were no abnormalities excepting in the abdomen, the upper two thirds of the right half being filled with a firm bulging mass irregular in outline, extending 1 inch to the left of the umbilicus, and 2 inches below the costal margin. The mass moved on respiration, and was only slightly tender. There was no history of hematuria, infection or other urinary disturbance.

October 6, the cystoscope was introduced and both ureters were catheterized. The bladder was normal but, owing perhaps to the pernicious and constant vomiting and inability to take water there was practically no urine. Doubtless also there was reflex inhibition of renal function as regards dye output for no phenolsulphonephthalein was excreted in fifteen minutes from either side and there was no bladder leakage.

The right pyelogram disclosed a practically normal pelvis, displaced mesially and partially overlying the spine. A good pelvic outline was obtained, and normal major and minor calices were well shown. There was no kidney outline shown on a simple film.

October 8, a combined phenolsulphonephthalein test made in the ward showed 45 per cent in the first half hour and 20 per cent in the second half hour. October 10, the ureters were again catheterized. The output of phenolsulphonephthalein in twenty minutes was 25 per cent from the right side, there was some urine, but no phenolsulphonephthalein from the left side, and no bladder leakage of dye. The patient's urinary function was undoubtedly reflexly inhibited from the stress and discomfort of the cystoscopic procedure, since there was no dye output on the sixth and almost none on the tenth, but there was normal urine and a high output on the eighth when taken in the ward without cystoscopy.

A normal but displaced pyelogram with a tumor of such enormous size was evidence that the growth was certainly not primary in the kidney itself, as no growth of this size could possibly have its origin and principal development in the kidney substance without marked filling defect in the kidney pelvis. The diagnosis made at that time was perirenal neoplasm, but further and more specific information as to its origin from a particular organ or tissue, and what organs were involved or invaded by its growth, could not be foretold, although it was evident from its rapid growth that the tumor was malignant.

Operation and Result—I felt that an operation would subject the patient to very grave immediate danger, and that the prognosis as to recurrence would be extremely bad if surgery was done, while a pancreatic or duodenal fistula was more than possible. Furthermore, nephrectomy might be necessary, and apparently the right kidney had quite as good a function as the other, so we felt that the case was inoperable. The patient, however, pleaded for an operation, and the internists who saw her thought she was entitled to her chance. She was, therefore, transferred to the general surgical ward and to the service of a member of the general surgical staff, October 22, she was operated on by Dr A B Cooke, who reported that the operation presented no special difficulties. A right rectus incision was employed. When the abdomen was opened, it was apparent that the tumor was retroperitoneal. On account of its size and the dense adhesions present, the tumor was enucleated from its bed from the mesial side. The only untoward occurrence was a small injury to the vena cava at the junction of the renal vein, which was clamped and ligated in continuity. The patient left the operating room in excellent condition, only a few minutes more than one hour having been consumed in the entire procedure. Technically the operation was a transperitoneal nephrectomy.

The tumor weighed 8 pounds (3.6 kg). The mass, when removed, resembled a kidney in outline. In order that the kidney itself might be seen, however, the mass had to be bisected, a reproduction of which is presented in the accompanying illustration. The kidney was examined by three pathologists, and proved to be a fibromyxosarcoma. At no point was the kidney, its fibrous capsule, or the ureter invaded. In addition to belonging in a rare class of neoplasms, the unique feature was the fact that the tumor was circumrenal, and the enormous mass symmetrically arranged around a normal kidney retained its typically reniform appearance.

The patient died on the twenty-second day after the operation.

Necropsy—The anatomic diagnosis was (1) compensatory hypertrophy of the left kidney, (2) dorsal decubitus of the left sacrum, (3) no metastases, (4) right suprarenal apparently not involved or invaded, (5) limited peritonitis involving the upper abdomen.

Chemical examination of the blood revealed, for each hundred cubic centimeters: sugar, 133 mg; urea nitrogen, 17 mg; preformed creatinin, 18 mg.

The specimen of the right kidney presented an oval tumor mass, 24 by 16 cm, having a slightly lobulated appearance.

¹ Lecene M P. *Paranephritic Tumors*. Tr A. *franc. de chir* 28 553 1919

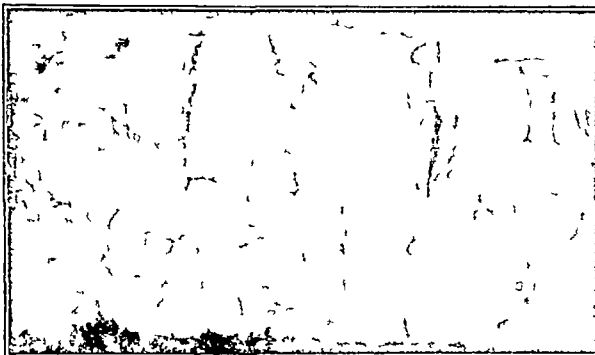
On one surface the ureter and kidney pelvis were seen. The pelvis was about normal in size and shape, was not distorted, and the calices could be traced outward. The ureter was of normal size. Section through the mass showed it to possess a distinct capsule definitely outlined. The kidney was compressed anteroposteriorly, but there was no invasion or infiltration of the tumor into the kidney. Grossly, the capsule of the kidney appeared intact and the tumor mass completely surrounded it, except over the pelvis and ureter. The cortical portion of the kidney was distinct. The tumor proper was firm and of a dense white appearance, and in areas had a mucinous appearance. One area in the periphery, which was oval-shaped—10 by 6 cm—was encapsulated, was softer than the remainder, and was of a gray, semitranslucent mucinous appearance, with several cysts in it. The average diameter of the cysts was 1 cm. The cut surface of the tumor showed numerous interlacing fibers coursing throughout.

Microscopic examination of a section from the peripheral portion showed numerous fibroblasts, with hyperchromatic nuclei, few mitotic figures, and a great abundance of intercellular substance. A section from the encapsulated, grayish, translucent portion showed numerous spindle-shaped cells which varied in size, but on the whole were relatively large, also numerous round cells. The nuclei were hyperchromatic, the cytoplasm acidophilic and nongranular. There were numerous mitotic figures in all phases. There was almost complete absence of intercellular substance. There were also myxomatous areas, the intercellular substance was not typically basophilic—probably myxomatous areas of degeneration. A section including the kidney and tumor showed some compression of the tubules, but no necroses or invasion. The kidney capsule was intact and distinct. Van Gieson's stains showed the cells to be of a fibroblastic nature. The diagnosis was large spindle-cell fibroblastic sarcoma.

COMMENT

Garceau,² in a complete review of the hospital records—necropsies and operations—for a period of ten years at both the Massachusetts General Hospital and the Boston City Hospital, found only one perirenal tumor—sarcoma. Gurlt,³ in an analysis of 14,630 tumors at Vienna, found only one paranephritic tumor—sarcoma. Albarran and Imbert⁴ compiled seventy-two cases from the literature during the period from 1862 to 1901, none were listed as personal cases by Albarran and Imbert. In 1897, Adam⁵ compiled forty-two cases of retroperitoneal lipoma from the literature, classified in three groups: (1) definitely perirenal, (2) of doubtful origin, (3) arising from mesenteric fat. Recent data from the Mayo Clinic⁶ are not available. Up to July, 1912, however, operation had been performed there in only eighty-three cases of malignant tumors of the kidney. No mention is made of perirenal neoplasms. Kidney tumors themselves are not as common as is generally supposed, but occur probably fifty times as frequently as paranephritic neoplasms.

Detwiler Building



Tumor removed at operation

Clinical Notes, Suggestions, and New Instruments

CEREBROSPINAL RHINORRHEA REPORT OF CASE *

JOHN EDWARD LOFTUS, M.D., PHILADELPHIA

Assistant Otolaryngologist, Misericordia Hospital, Clinical Assistant to Outpatient Nose and Throat Department, Jefferson Medical College Hospital

Cerebrospinal rhinorrhea is a rare affection, characterized by the escape of cerebrospinal fluid into the nose.

REPORT OF CASE

A woman, aged 40, single, engaged in housework, was seen, Jan. 5, 1922, after she had been treated three months for sinusitis. She was complaining of a persistent dripping of clear fluid from the left nostril for the preceding three months. The family history was negative with the exception that obesity ran in the family. The patient had always been very stout, the present weight was 241 pounds (109 kg), otherwise the past history was negative. There was no history of any head injury.

The present condition began, Oct. 23, 1921. After a very hearty laughing attack followed by a severe sneezing, the patient was aware of a clear, limpid fluid from the left

nostril, associated with this there was a severe frontal headache, which extended to the vertex. The headache had been constantly present and diminished somewhat when the flow increased. At the time of examination there was a continuous dripping of clear limpid fluid from the left nostril. The quantity for one hour was 1½ ounces (45 cc). The fluid was clear, odorless, tasteless and without sediment and gave a slightly alkaline reaction. The flow had always come from the left nostril, with the exception that when I firmly packed the left naris it then

came from the right side just as freely. At first the fluid would make the patient's handkerchiefs stiff on drying but this condition lasted only during the first week. At present there was no alteration in the color or consistency of the handkerchief when it was dried; it was very soft.

The flow of fluid was greatly altered or increased by the position of the head. When the head was inclined forward, there was a marked increase in the flow; when the head was in the upright position, dripping of the fluid was less; when the head was tilted backward the fluid ran down the post-nasal space into the throat and was swallowed, from the frequent elevation of the thyroid cartilage in the act of swallowing it would lead one to believe that the flow was profuse when she lay in bed with the head hanging over the edge, face downward, there was a drop of fluid every two seconds. During the sleeping hours the flow continued the same as in the daytime, so much so that it necessitated the patient's either lying on her face or turning her face to one side. In the morning the pillow case was completely inundated, soft and stainless. The constant swallowing of this fluid at times had caused severe diarrhea. An unusual occurrence in this case—i.e., the patient's statement was correct and I think it was, in view of her intelligence—was that on three occasions as she stated the fluid escaped from her left ear coming out in gushes for a short time. This occurred before she came under my care.

The flow of fluid also was increased when the patient worked hard, climbed steps and

* Read before the Section on Otorhinolaryngology of the American Association of Physicians of Philadelphia, 1922.

2. Garceau, Edgar. Tumors of the Kidney. New York: D. Appleton & Co., 1910.

3. Gurlt. Lancet, 1875, 1909, quoted by Rolleston and Turner.

4. Albarran and Imbert. Penal Tumors. Paris: Masson & Cie, 1903.

5. Adam. Retroperitoneal and Perirenal Lipomata. Montreal, M. J.

25, 529 (Jan.), 1897, 25, 620 (Feb.), 1897.

6. Brasch, W. F. Clinical Data on Malignant Renal Tumors. J. A. M. A., 60, 274 (Jan. 25), 1913.

when she became angered and excited. The patient carefully measured the quantity of fluid during the waking hours on several days, it amounted to 32½ ounces (960 c.c.) a day.

The external nose was straight, there was slight excoriation, and there were a few fissures about the left vestibule and the upper lip. The mucous membrane was congested in the right nasal fossa and markedly so in the left. The middle and inferior conchae in both nasal fossae were slightly hypertrophied. The nasal septum was sharply deviated to the right, and had a spur at the base anteriorly on the same side which touched the center of the concha nasalis inferioris. There was no evidence of any pus in the nasal chambers or postnasal space. The postnasal space was slightly congested, with an area of redness about the eustachian orifices, otherwise it was normal. The tonsils were of average size and were normal. Transillumination of the frontal sinuses revealed that they were rather large. The left maxillary antrums were slightly cloudy, the right sinus was normal. In carefully examining the nose on repeated occasions, I was unable to determine definitely where this fluid made its exit, but I think that it came from the posterior portion of the roof of the nose and not from the middle meatus.

The tympanic membrane of the left ear was intact, and there was apparently no opening in the superior wall of the external auditory canal.

The fluid that escaped from the left naris was clear, colorless, and without a sediment. The specific gravity was 1.006. It contained 36 cells per cubic millimeter, this number is higher than normal for spinal fluid, but the majority of the cells were epithelial cells and presumably from the nasal mucosa. The fluid contained traces of albumin and of globulin, the total was about 0.03 per cent, which is exactly the amount found in normal spinal fluid. There was a trace of dextrose, the quantity appearing to be identical with that found in normal spinal fluid. The chlorids amounted to 7.26 per cent, exactly as found in normal spinal fluid. The colloidal gold test yielded a 0000000000 reaction, as in normal spinal fluid. The quantitative Wassermann reaction was negative with serum in amounts of 0.1, 0.02, 0.004, 0.002 and 0.001 c.c. With cholesterinized antigen, alcoholic extract of syphilitic liver and acetone insoluble lipoids used as antigens, it was negative.

The general results of this analysis showed that the fluid had practically the identical composition of normal cerebrospinal fluid, and Dr. John A. Kolmer, who examined it, regarded it as such.

The patient's eyes apparently never gave her any trouble, but when first seen I referred her to Dr. L. Webster Fox for ophthalmoscopic examination. There was no prominence of the eyeballs, and no nystagmus, the pupils were normal in size and contour, they reacted to light and accommodation normally, there was no photophobia or lacrimation, and no paralysis of the ocular muscles. Jan. 9, 1922, there was a slight optic neuritis or what might be called a fulness of the optic nerve in the left eye due to a probable blocking of one of the accessory canals. January 10, however, there was marked improvement in the optic nerve sheath. The visual field was markedly contracted, January 9 and 10. After that date, and on February 21, the fields were not pronouncedly contracted as in the preceding examinations. The distal vision was not impaired.

A thorough neurologic and mental examination was made by Dr. D. J. McCarthy, who reported no evidence of organic disease of the brain, although he was of the opinion that the headaches were suggestive of a localized low grade meningitis.

My own observation of this patient was that she was extremely nervous and easily excited to fits of anger. At times she became very morose and confined herself to her room for indefinite periods making her appearance only at mealtimes, she refused to speak to any one at times when she became angered she went into a fit of temper and became apparently violent. At all times apparently she was very much depressed. On two occasions she made a verbal threat to commit suicide. Prior to the onset of her present condition she was a very pleasant person, worked hard at home with household duties, was very handy making miniature dolls

to represent world celebrities, and was extremely clever at embroidery. At present she refused to do any housework or cooking, and had lost her desire for doing any fancy work.

The roentgen-ray examination of the head and sinuses, made by Dr. Henry K. Pancoast, revealed the frontal sinuses negative, anterior ethmoid sinuses, clear, maxillary sinuses, clouded on the left side, septum, deviated to the right, the right side being entirely clear, and left side clear above, the lower turbinates filled the nasal cavity fairly well, sphenoid sinuses, clear, posterior ethmoid, clear, sella turcica, normal, there being some calcification in the frontal region, presumably of the meninges, over two small areas, which may not be of any significance.

The clear sphenoid and posterior ethmoid sinuses would seem to indicate that the cerebrospinal fluid did not come down in this region. The occlusion of the left side of the nose would suggest that the escape was more on that side. The significance of the clouded left antrum is uncertain.

Unfortunately, there was nothing that could be done in the way of treatment. It is not only useless, but it is harmful to check the flow of fluid. In many of the cases reported, when the flow ceased spontaneously or was checked, the patient became worse. The administration of drugs by mouth and local applications intranasally have proved useless. The latter form of treatment is positively contraindicated, such practice may cause encephalitis. Lumbar puncture has been tried and has proved unsuccessful.

The patient became so depressed that it was deemed advisable to send her to the hospital for a rest cure. After she had been in the hospital two and a half months, the flow of fluid from the left nostril entirely subsided, two weeks later she was suddenly taken with a chill, and a rise of temperature to 104, associated with numbness of the entire body and severe headache. Two days later she went into a semicomatose state with alternate periods of lucidity. The following day she developed a facial paralysis and tremors of the entire body. Two days later she developed auditory nerve deafness, and three weeks later died of acute encephalitis.

Medical Arts Building

SUBSTERNAL THYROID WITH BILATERAL LARYNGEAL PARALYSIS*

LOUIS HUBERT, M.D., NEW YORK

Assistant Surgeon, Manhattan Eye, Ear and Throat Hospital

It is now generally recognized that, in cases of thyroid disease, paresis or paralysis of the vocal cords may occur previous to an operation on the thyroid gland.

Any laryngeal impairment that is caused by an enlargement of the thyroid gland is nearly always unilateral. When a bilateral involvement exists previous to operation, it is usually caused either by some lesion in the central nervous system, such as syphilis, or by a malignant disease of the thyroid gland.¹

The case here reported presents a bilateral involvement of the vocal cords, without demonstrable lesion in the central nervous system and without evidence of malignancy in the thyroid gland.

REPORT OF CASE

History—D. G., a woman, aged 50, born in Poland, came to the Manhattan Eye, Ear and Throat Hospital, clinic of Dr. McCullagh, Jan. 7, 1922, complaining of difficulty in breathing and of choking attacks. The family history had no bearing on the trouble, with the exception that the maternal grandmother had a goiter. The patient had had pneumonia three times. Otherwise she was in good health up to eight years ago, when the menopause began. Since that time she was very nervous, had palpitation of the heart on exertion, felt very weak and lost considerable weight. A physician of the board of health thought that she had tuberculosis of the lungs, although the sputum was negative. She was sent to

Read before the Section of Rhinology and Laryngology, New York Academy of Medicine, Jan. 24, 1923.

¹ Crile, G. W., and Associates. *The Thyroid Gland*. Ed. 2. Philadelphia: W. B. Saunders Company, 1922, p. 58.

the Bedford Sanatorium, where she remained six months. There she had no cough, but lost more weight, altogether about 35 pounds (16 kg). From her usual weight of 125 pounds (56.7 kg) she was reduced to 92 pounds (41 kg). Dr Alfred Meyer, who examined her at the sanatorium, was convinced that she had no tuberculosis, and he advised her to go home.

The difficulty in breathing and choking attacks began in the early part of 1920. A laryngologist thought that the trouble was due to nasal obstruction, and he performed a submucous resection of the nasal septum. As the symptoms became worse, she was advised to have the tonsils removed. She then came to the Manhattan Eye, Ear and Throat Hospital. Besides the dyspnea and the choking attacks, which appeared only after exertion, she also complained of frequent colds, profuse watery, nasal discharge, and slight hoarseness for the last two months. She had similar attacks of hoarseness in the last few years.

Examination—The patient was fairly well nourished, the weight was 150 pounds (68 kg). There was a fine tremor of the tongue and the outstretched fingers. The pulse rate was 120. The thyroid gland above the episternal notch was slightly enlarged, and the lower border of the gland could not be outlined. There was dullness on percussion over the upper part of the sternum. The left vocal cord did not move at all and was shortened. The left arytenoid was fixed and tipped slightly forward. The right cord did not abduct, but in phonation approached the left cord. This explained the patient's fairly good voice. There was only a very small space between the vocal cords through which the patient was breathing. The left half of the larynx was completely paralyzed, and the right half presented a paralysis of abduction. Otherwise the general physical examination was practically negative.

On roentgen-ray examination, January 10, the trachea seemed to be in the median line, although there was a possible slight deviation to the left. There seemed to be a mass in the superior mediastinum which might be a thymus or a substernal thyroid. There was also some scoliosis from the second to the tenth dorsal vertebrae. After fluoroscopic examination, it was decided that the mass was a substernal thyroid.

The Wassermann reaction was negative.

Treatment—The patient had four deep roentgen-ray treatments. These did not seem to do her any good subjectively. After each treatment she had to be in bed for three or four days on account of the extreme weakness, which followed the exposure to the rays. Her pulse rate and nervousness were not diminished. Objectively, the treatment seemed to have done some good as shown by another roentgenogram November 14. The mass seemed to be considerably diminished in size. The laryngeal picture, however, had not changed. She had no roentgen-ray treatments for about six months, as she was unwilling to have them. Since November 11, she has taken quinin hydrobromid 5 grains (0.3 gm) in capsules three times a day. She now feels somewhat better, she is not so nervous, and the pulse rate is reduced to 98.

COMMENT

This case presents a difficult problem for proper management. I do not think that at this time an operation on the thyroid gland would do the patient any good. There is no case of complete paralysis of the vocal cords on record in which the patient recovered from the paralysis after operation on the thyroid gland. It is probable that the dyspnea which the patient suffers at times will become worse and more frequent on account of the very small breathing space between the vocal cords. It may then be necessary at any moment to do a tracheotomy. Until recently no direct surgical attempts on the vocal cords have been made in such cases. Chevalier Jackson, however, has performed ventriculo-cordectomy in a number of instances operating by the direct laryngoscopic route. He believes that these patients regain a fairly good voice by the vicarious use of the false vocal

cords. Crile,¹ in one of his cases did a submucous resection of the vocal cords through a laryngofissure, preceded by a tracheotomy. It is probable that a similar operation will have to be performed on this patient, but so long as the patient is comfortable, I feel that no operative work ought to be done.

161 East Seventy-Ninth Street.

A SECOND INITIAL LESION OF SYPHILIS ONE YEAR AFTER THE FIRST

WILLIAM C. NICHOLS, M.D., AND ARTHUR A. NICHOLS, M.D.,
FARGO, N. D.

Mr. J., aged 28, a traveling salesman, consulted a physician in a neighboring city, Nov. 10, 1921, for a small sore on the glans penis. He was told that it was a simple infected herpes, and was given a jar of a blue colored ointment to apply. The lesion healed in about ten days. Jan. 4, 1922, he consulted us with a florid maculopapular eruption which was generally distributed over the forehead, face, trunk and extremities, with several mucous patches on the tongue and inside of the cheek. As the rash was typical, and there had been the history of a lesion we did not think it necessary to make a Wassermann test.

Intravenous injections of 0.9 gm of neo-arsphenamin were given January 4, February 5, 12, 19 and 26, March 26 and April 2, 9 and 16. The patient refused to take mercury intramuscularly so was given a 50 per cent ointment for inunctions. During the entire course of his treatment, up to and including August 15, the patient used only 3 ounces of this preparation, and no other form of mercury. A Wassermann test June 25 was negative with alcoholic antigen, and positive with cholesterinized antigen.

The patient was advised to continue the inunctions and was given six more injections of neo-arsphenamin, 0.9 gm, June 28 and July 1, 5, 8, 15 and 22. He was instructed to return for a Wassermann test, October 1, but failed to do so. He came, Feb. 4, 1923, complaining of a sore on the inner surface of the upper lip which he had noticed for about three weeks. This had been painted a few times with silver nitrate by a dentist. Examination showed a typical indurated chancre with some healing around the edges. It was about the size of a penny, with a flat, ulcerating surface. Slides stained by the Giemsa method showed many spirochetes. The Wassermann test was 4 plus. He was given 0.6 gm of arsphenamin February 11, and when he returned for the second treatment a week later the sore had entirely disappeared.

This case is interesting in view of the fact that the patient was irregular in receiving the arsphenamin injections, and was very lax with the mercury inunctions not only as to time but also as to the quantity used throughout the period of treatment.

608 Front Street.

TRAUMATIC ASPHYXIA

A. H. TRAVER, M.D., ALBANY, N. Y.

C. V. M., aged 47, a farmer who had always been in good health was driving his automobile weighing about 3000 pounds over a farm road Aug. 7, 1922 when the car skidded and went over a bank of about 8 feet. The car tipped entirely over resting on top of its body with the wheels in the air. The patient was caught under the overturning his back on the ground and the top of the body resting on the lower part of his chest. It was a few minutes before the car was jacked up and tipped out. The men who saw him thought he was black. He was unable to speak and see. He could not see. He was taken to his home. I reached him at 5:30 p. m., and the accident.

The patient's eyes were closed. The car was but a few feet from the accident.

¹ Jackson, Chevalier. Ventriculo-cordectomy. A New Operation for the Cure of Gouty Paralytic Laryngeal Stenosis. Arch. Surg. 4: 277 (March) 1922.

being able to see an electric light flashed before his eyes. He was conscious. His clothes were covered with blood, apparently from the nose. The pulse could not be felt at the wrist, and the heart beats could be barely heard with the stethoscope. Morphine, strychnine and nitroglycerin were given. In about an hour the patient had improved so that it was thought safe to move him to the hospital. When he entered the hospital, the nurses thought he was a colored man. He vomited, but there was no blood in the vomitus. The urine showed no blood. During the night the abdomen became much distended, this condition was relieved by an enema. In the morning his color was the same, and the eyes were still bulging. He could see light, but was unable to recognize any one. The pulse was 110, the temperature, 99. Dr. A. J. Bedell, who examined the eyes, said that the hemorrhage was not in the eyes, and thought that the blindness was caused by the pressure of the blood on the nerve. The patient rapidly improved, August 14, the pulse was good, and the heart sounds were strong. The discoloration of the skin was less marked. He was now more the color of an Indian. The eyes were still red. He could recognize people, but could not see to read. Roentgen-ray examination showed fracture of the left transverse processes of the seventh, eighth and ninth dorsal vertebrae. The patient was taken home in an ambulance ten days after the accident. October 15, the patient said that he felt well, he had some pain in the hip. He could see fairly well with one eye, but the other was still blurred. Dr. Bedell's reports on the eyes were that at the first examination, August 8, there was marked congestion, with extreme subconjunctival hemorrhages which surrounded the cornea, the pupil reacted normally to light and accommodation, the media were clear. When last seen, November 2, the vision of the right eye was 20/15, the fundus was clear. Vision of the left eye was 10/200, the disk was white, there was a slight change in both veins and arteries. The field of vision showed decided contraction, and in the left eye there was a small central scotoma.

Little is said about this condition in the various textbooks, and different reasons are given for the symptoms.

27 Eagle Street

Treatment of Pneumonia—Dr. HENRY F. STOLL, Hartford, Conn., writes: Don't think of pneumonia solely as a disease of the lungs. Heart failure is responsible for many fatalities. At the first examination and at each succeeding visit, note the position of the apex beat and observe the quality of the heart sounds, this can be done without disturbing the patient, and may enable one to detect the first signs of a failing myocardium or the beginning of pericarditis. Don't make a complete examination of the lungs every day unless you suspect pus, it exhausts the patient. Never direct a patient to "sit up" or to "roll over" if very ill, to examine his back, he may be turned on his side with little discomfort if it is done by reaching across the patient, placing one hand under the further shoulder, the other under the pelvis, and gently and slowly turning him toward you. Whenever there is a suspicion of diminished myocardial reserve small doses of digitalis should be begun from the onset. Don't forget that an increase in restlessness and in the respiratory rate may be due to a distended bladder, and that many cases of incontinence can be cured by a catheter. Save in the very feeble cold, fresh air is desirable—but be sure that you have a warm patient. When serum (Type I) is indicated, its curative effects are directly proportionate to the promptness of its administration. Quiet and sleep are absolutely essential and the elimination of unnecessary exertion may be life-saving.

Preventive Neuropsychiatry—One of the greatest opportunities for neuropsychiatry lies in the field of increasing interest in the study of persons who as yet have not developed actual psychoses but who are on their way, and prevention here as in many other fields, should constitute a more than laudable ambition.—William House, *California State J. M.* 21:29 (Jan.) 1923

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY

MERCUROSAL—Disodiumhydroxymercursalicyloxyacetate— $(\text{HOHg})\text{NaOOC}\cdot\text{C}_6\text{H}_4\cdot\text{OCH}\cdot\text{COONa}$. Mercurosals contain from 43.0 to 43.8 per cent of mercury in organic combination.

Actions and Uses—It is claimed that mercurosals are relatively free from irritant action, that it is eliminated without untoward effect on the kidney and that its toxicity is relatively lower than mercuric chloride and mercuric salicylate. Mercurosals are intended for the mercurial treatment of syphilis. It is administered either intramuscularly or intravenously. The Council accepted mercurosals as a comparatively non-toxic, comparatively non-irritating mercury salt which does not precipitate protein.

Dosage—The usual intramuscular dose is 0.05 Gm dissolved in 2 Cc of sterile water every fourth or fifth day for ten or twelve doses. The usual intravenous dose is 0.1 Gm dissolved in 5 Cc of sterile water administered every second or third day for ten or twelve doses.

Manufactured by Parke Davis and Co., Detroit, Mich. U. S. patent applied for U. S. trademark No. 161254.

Mercurosals R 1 (Intravenous) Sealed tubes containing mercurosals 0.1 Gm.

Mercurosals R 2 (Intramuscular) Sealed tubes containing mercurosals 0.05 Gm.

Mercurosals are a white amorphous powder. It is soluble in about 10 parts of water, insoluble in the usual organic solvents. Dilute aqueous solutions of mercurosals are quite stable when protected from air but on prolonged standing may give rise to an insoluble compound. Mercurosals are decomposed by acids, strong reducing agents, salts of heavy metals such as silver or lead yield insoluble precipitates. From a 1 to 2 per cent aqueous solution of mercurosals, calcium chloride precipitates a calcium salt which dissolves on subsequent dilution with water.

Mercurosals are faintly alkaline to phenolphthalein solution. When an aqueous solution of mercurosals is treated with an alkali hydroxide a clear solution results. No precipitate is produced when an aqueous solution of mercurosals is saturated with carbon dioxide. When an aqueous solution of mercurosals is acidified with acetic acid or with mineral acids a white precipitate is produced.

Heat mercurosals, 1 Gm with hydrochloric acid (1:1), 25 Cc until decomposition has taken place, cool and collect the precipitate, dissolve the precipitate in alkali filter, reprecipitate and crystallize from water, these crystals melt at 192 C (*salicylacetic acid*). Treat an aqueous solution of mercurosals with iodine solution, acidify with hydrochloric acid and collect the precipitate after drying the precipitate melts at 217 C. Saturate an aqueous solution of mercurosals with hydrogen sulphide, no precipitate is produced (*absence of inorganic mercury*).

Dry mercurosals at 100 C for one hour, the loss does not exceed 1 per cent. Dissolve about 0.4 Gm of dried mercurosals accurately weighed in water 5 Cc, add concentrated hydrochloric acid 5 Cc, cover the beaker and digest on a steam bath until solution takes place, dilute to from 100 to 125 Cc with water and saturate with hydrogen sulphide, collect the precipitate in a tared gooch crucible, wash successively with water, alcohol and ether dry to constant weight at 100 C, the weight of mercuric sulphide corresponds to from 43 to 43.8 per cent of mercury.

A physiologic test is made which shows the comparative shock which is caused by large doses of 2 per cent solution when given intravenously. The immediate lethal dose per kilogram body weight of rabbit practically identical with the dose causing shock of this animal is determined by a series of experiments with a 2 per cent solution of each lot of mercurosals. Carefully selected rabbits weighing from 2 to 4 kg are injected intravenously. Death must take place in from 7 to 15 minutes. The average dose of mercurosals immediately lethal and causing shock is 0.025 gram per kilogram of body weight.

PNEUMOCOCCUS ANTIBODY SOLUTION, TYPES I, II AND III COMBINED—An aqueous solution of specific pneumococcus antibodies, Types I, II and III in equal proportions, approximately free from the proteins of horse serum. The vaccine is prepared by adding to the serum from horses immunized by repeated injections of pneumococci, Types I, II and III, a heavy emulsion of equal proportions of pneumococci Types I, II and III. The mixture is heated to kill the germs, centrifuged and washed with salt solution to rid it from horse serum. The washed sediment is emulsified in physiological solution of sodium chloride containing 0.25 per

cent of sodium bicarbonate and then heated at 55 C. for from thirty minutes to one hour to cause dissociation of the antigen and the antibody. The mixture is centrifuged, the supernatant liquid removed, chilled, recentrifuged and filtered through a filter candle. The final product contains 0.035 Mg of nitrogen per cubic centimeter.

Actions and Uses—There is some evidence that this antibody solution is of value in the treatment of lobar pneumonia.

H. K. Mulford Company, Philadelphia
Pneumococcus Antibody Solution Types I, II and III Combined
Mulford—Marketed in packages (AI 48 010) of one 50 Cc. double ended vials with one complete intravenous outfit, and in packages (AI 48 160) of one 50 Cc. double ended vials.

Special Article

THE CARE AND FEEDING OF INFANTS

(Continued from page 773)

[NOTE—This is the twelfth of a series of articles on the care and feeding of infants. It is addressed to the general practitioner rather than to the pediatric specialist. When completed, the series, somewhat elaborated, will be reprinted in book form.—Ed.]

WHOLE MILK DILUTIONS WITH CARBOHYDRATE ADDITIONS

In applying the rules for the feeding of normal, healthy infants it must be remembered, as previously emphasized, that each infant must be fed to meet its individual requirements. Therefore the rules must be so modified as to meet the individual demands. If milk dilutions with the addition of carbohydrates are used, the simplest and most natural standard is that which tells us how much milk and carbohydrates the baby should get per pound or per kilogram of body weight.

To be exact, we should express, or at least be aware of, the number of grams of proteins, fat, carbohydrates, salts and water that the infant is receiving for each pound of its body weight.

If statistics on infant feeding were collected on this basis rather than on percentages of the ingredients in the milk mixtures (the total mixtures used by different physicians being of such variable quantity), the collected data would be far more valuable as a basis for future work in infant feeding.

In every instance the general health of the infant is of the greatest importance in estimating its capacity for assimilating the diet.

To meet the minimal per pound body weight protein (15 gm.), fat (18 gm.), and calcium oxid (0.08 gm.) requirements, the average normal infant will require each day a minimum of 1½ ounces (45 cc.) of cow's milk. For each kilogram of body weight, 35 gm. of protein and 40 gm. of fat will be required. These will be furnished by 100 cc. of cow's milk.

For normal full weight infants, the addition of one-tenth ounce (3 gm.) by weight of sugar to the milk mixtures will be required for each pound of body weight (66 gm. per kilogram).

Water equal to 3 ounces per pound, or one-fifth the body weight, will meet the day's requirements for young infants, and amounts approximating 2½ ounces per pound, or one-sixth the body weight, will answer for older infants. The difference between the total baby's fluid requirement and the milk in the mixture

can be added as boiled water or cereal water or a portion of it may be fed between meals.

Cereals in the form of thin gruels may be added to the milk mixtures in quantities varying from one-sixtieth to one-thirtieth ounce (0.5 to 1 gm.) for each pound of the body weight after the first or second month of life.

A mixture formulated to include these recommended amounts of food ingredients will average about 45 calories for each pound of body weight (Table 19).

Practical clinical experience has taught us that infants fed on cow's milk mixtures will frequently require approximately 2 ounces (60 cc.) of cow's milk per pound of body weight, except during the first few weeks of life, when smaller quantities of whole or skim milk are indicated. Such mixtures will average approximately 55 calories for each pound of body weight.

In beginning feeding with cow's milk, mixtures must always be started as weak formulas, more often only 1 ounce (30 cc.) of cow's milk being used to a pound of body weight, the strength being gradually increased to meet the infant's needs.

Underweight infants should be fed according to their weight at the initiation of feeding, the strength of the mixture being increased gradually but rapidly as the baby shows ability to handle the food, thus approximating the needs of a full-weight baby of the same age, in milk, sugar and water. These babies will frequently, therefore, require 2 ounces (60 cc.) or more of milk per pound of body weight, and carbohydrates must be added in proportion.

TABLE 19 — MIXTURE CONTAINING RECOMMENDED AMOUNTS OF FOOD INGREDIENTS

Milk	1½ ounces	=	30 calories
Sugar	1/10 ounce	=	12 calories
Starch	1/50 ounce	=	3 calories
45			

With the institution of a mixed diet, the infant thrives with less milk per pound of body weight.

In preparing to feed an infant these general rules should be followed:

The baby should be weighed, and one should determine whether or not its weight is within normal limits.

The amount of cow's milk necessary in the preparation of the mixture should be determined. One and a half ounces of cow's milk per pound of normal body weight at the baby's age is a safe minimum for a healthy infant. It should be remembered that normal infants may require as much as 2 ounces per pound of body weight.

The total daily quantity of water required should be determined, 3 ounces per pound (one-fifth the body weight) during the first six months and somewhat less, 2½ ounces per pound (one-sixth the body weight) after this period. Sufficient water (or cereal water) should be added to the milk to bring the total quantity of mixture up to the day's requirements in fluids.

Three grams of sugar and later an additional 0.5 to 1 gram of starch should be added for each pound of body weight.

The curd should be made more digestible either by boiling, adding cereal water, or alkalizing the mixture.

MIXTURES ESTIMATED ON THE BASIS OF CALORIC REQUIREMENTS

The caloric needs of infants are made the basis for formula construction.

The protein, fat, salts and carbohydrates must be so combined as to meet the infant's needs in each of these elements

Forty-five calories per pound, or 100 per kilogram, may be considered as meeting the minimal daily requirement of the average normal infant. Thin infants will require from 50 to 70 calories per pound (110 to 150 per kilogram)

The protein content should be supplied first, next the needs in fat, and last the carbohydrates

Protein—The normal infant will require a minimum of 15 gm, which provides 6 calories per pound, this is furnished by the protein contained in 1½ ounces of cow's milk. Per kilogram, 35 gm provide 143 calories, furnished by 100 cc of milk.

Fat—The needs in fat, 18 gm, or 165 calories, per pound, will, for most infants, be provided for by 1½ ounces of milk. Per kilogram, 4 gm, which provides 37.2 calories, will be furnished by 100 cc of milk.

TABLE 20—AMOUNTS REQUIRED FOR AN INFANT WEIGHING TEN POUNDS

	Ounces	Calories
Milk	15	315
Sugar	1½	135
Water	15	—
Total		450

TABLE 21—AMOUNTS REQUIRED FOR AN INFANT WEIGHING FIVE KILOGRAMS

	Gm or Cc.	Calories
Milk	500	350
Sugar	37.5	150
Water	500	—
Total		500

Carbohydrates—The sugar required in excess of the 2 gm (82 calories) provided by the milk, when 1½ ounces is fed per pound, will amount to 3 gm, or one-tenth ounce, for each pound of body weight. This will furnish 123 calories, or a total of 205 calories inclusive of the sugar in the milk. Per kilogram, 66 gm of sugar must be added to the 45 gm that is contained in 100 cc of milk. The infant will therefore receive 11 gm of sugar per kilogram, which provides 45.5 calories. Therefore, in feeding 1½ ounces of milk, plus one-tenth ounce of sugar, the following calories will be provided: protein, 6, fat, 16.5, and sugar, 20.5, or a total of approximately 43 calories for each pound of body weight. This requires considerable calculation in estimating the proper proportion of the ingredients and even more so if a second carbohydrate as starch is added.

In feeding 100 cc of milk⁴¹ with 66 gm of sugar added, the infant will receive, for each kilogram protein, 14.3 calories, fat, 37.2, and carbohydrates, 45.5, a total of 97 calories. We will therefore make use of the enumerated facts for calculating the initial diet of a normal infant as follows: An infant weighing 10 pounds will require 15 ounces of milk. Calculating his caloric needs at 45 per pound, his diet should contain a total of 450 calories. Of this 315 calories will be furnished by his milk. The remaining 135 are to be supplied by carbohydrates, sugar or sugar and starch. If sugar is used, 1½ ounces will be required. Estimating 3 ounces of total fluids per pound of body

weight, 15 ounces of water will be added as a diluent. The total formula will therefore be constituted as in Table 20.

If estimated by the metric system, an infant weighing 5 kg requires 500 calories, and should receive the amounts given in Table 21.

While in the case of average normal full-weight infants this method of calculating the diet works out satisfactorily, when underweight infants are to be fed, the estimation of needed ingredients is less simple. It becomes even more complicated when cereals and other foods are added to the diet.

This method is also more complicated than the one previously recommended for analyzing diets that infants are taking. In comparing the two methods of estimating the needed ingredients for the infant's diet, the first is based on the amounts of each of the ingredients needed, and the second on the calories required.

It is to be remembered that the quantities recommended under the heading Milk Dilutions with Added Carbohydrates, in the amounts suggested as minimums, furnish approximately 45 calories per pound, or 100 per kilogram, of body weight—the proportions needed by the infant. In the feeding of underweight infants, the amounts ultimately needed are calculated on the basis of the estimated weight of the normal infant of the same age and development.

UNDILUTED WHOLE MILK WITH CARBOHYDRATES

While undiluted milk has been used with varying degrees of success by some of the continental pediatricians, on the whole it is not well borne before the fourth month of life. When undiluted whole milk is to be fed to a young infant, it should first be boiled in order to change the protein so that it will be precipitated in the infant's stomach as a fine curd. Alkalinizing the milk by the addition of sodium citrate or sodium bicarbonate also results in the formation of fine curds. If undiluted milk is used in the feeding of the very young infant, the size of the individual meal must of necessity be reduced under that recommended for diluted mixtures, or fewer meals must be given. Otherwise the caloric requirements of the infant will be exceeded. Water must be administered between feedings to meet the infant's needs for fluids.

While, as a routine measure of feeding, undiluted whole milk cannot be recommended, in some forms of vomiting and when gastric dilatation is present, small quantities of a concentrated food can often be fed to better advantage than larger quantities of milk dilutions. When carbohydrates are added, they should be in such amounts as are indicated by the infant's weight and age.

TOP-MILK DILUTIONS

By this method a definite number of ounces of the upper part of milk which has stood for a number of hours is used as a basis for preparing the mixture.

TABLE 22—FAT PERCENTAGES

	Per Cent
Upper 16 ounces	7
Upper 20 ounces	6
Upper 24 ounces	5

To carry out top-milk feeding successfully, the percentages of fat must be known which occur at various levels in 32 ounces (1 quart) of milk (containing 4 per cent of fat) which has stood for six hours or longer.

⁴¹ Milk calculated as containing per centages as follows: protein 3.5 fat 4 sugar 4.5

This method endeavors to provide ample calories, and in this respect may be considered as successful. The chief advantages are that high fat and low casein mixtures can easily be prepared by the use of various dilutions of different layers of top-milk. With these mixtures there is the danger of feeding dilutions containing an excess of fat, not uncommonly reaching 5 or 6 per cent when the upper layers are used. Such high fat mixtures not uncommonly result in fat indigestion. The early advocates of this method recommended it on the basis of the low protein content of the mixture, believing that a high casein content frequently caused acute intestinal disturbances. In the light of our present knowledge, however, we know that the casein of milk boiled or alkalinized, or mechanically divided by the addition of cereals, is easily digested and causes nutritional disturbances only in exceptional cases. Owing to the tendency to use high dilutions, the sugar and salt content, more especially the latter, may be insufficient. This method of feeding has many advocates, and has given good results when its shortcomings are recognized and the diets properly balanced.

It will be of advantage to use the upper 16 ounces of the quart of milk (which will have a content of 7 per cent fat and 3.5 per cent protein), in feeding certain selected infants who are not making satisfactory progress on the whole milk dilutions. When desirable, the 7 per cent top-milk may be used in the mixture in amounts of $1\frac{1}{2}$ ounces per pound, or 100 cc per kilogram, as an alternative for whole milk. Such mixtures will average about 3 gm of fat per pound, or 6.6 gm per kilogram of body weight.

While this amount of fat is in excess of the amount needed, only in exceptional cases will a healthy infant be upset by it.

High fat mixtures are contraindicated in most infants with disturbed digestion, except those in which it is due to carbohydrate intolerance or protein sensitization. In these instances the fat will often replace, in part at least, the insufficiency of carbohydrate and protein.

CREAM AND SKIMMED MILK MIXTURES

By the use of 16 per cent cream and skimmed milk as the basis for various milk modifications, a wide range of combinations of the various food elements may be obtained. By the use of cream and skimmed milk, an additional factor is added for calculating the percentage content of the dilutions. This is, however, not a great objection. The fact should be recognized that most physicians think of mixtures in terms of percentages without recognizing the possibility that one set of infants may receive large quantities of these dilutions in their day's feedings, while another group, under different care, may receive much smaller quantities and fewer feedings of the same quality of mixture. If we accustom ourselves to think of the number of grams of fat, protein, carbohydrate and salts per kilogram or pound of body weight, it will in all probability offer the greatest possibilities of all the methods so far advocated.

For feeding purposes, gravity cream (of which about 6 ounces or somewhat less may be obtained from a quart of a good quality of milk) contains fat, 16, protein, 3.5, and carbohydrate, 4.5 per cent. The skimmed milk may be obtained by carefully pouring or dipping off the cream. It should contain fat, 0, protein, 3.5, and carbohydrate, 4.5 per cent.

The average infant should receive fat, from 1.5 to 2 gm, protein, 1.5 gm, and as a minimum of added

carbohydrate, 3 gm (above that contained in the cream and skimmed milk), per pound of body weight. These will be obtained by the use of cream (16 per cent), skimmed milk and sugar, the contents of which are given in Table 23.

TABLE 23—CONTENTS OF CREAM, SKIMMED MILK AND SUGAR

Cream (16 per cent fat)	in 1 oz	5 gm fat
Skimmed milk (3.5 per cent protein)	in 1 oz	1 gm protein
Sugar (100 per cent carbohydrate)	in 1 oz	30 gm carbohydrate

The amounts needed are given in Table 24.

TABLE 24—AMOUNTS NEEDED

For each gram of fat	$\frac{7}{10}$ oz or 6 cc of cream
For each gram of protein	1 oz or 30 cc of skimmed milk
For each gram of carbohydrate	$\frac{1}{30}$ oz, or 1 gm of sugar

In the mixture, the ingredients will be used in the amounts, *per pound of body weight*, given in Table 25.

TABLE 25—AMOUNTS FOR EACH POUND OF BODY WEIGHT

Cream	$\frac{7}{10}$ to $\frac{4}{10}$ oz (fat from 1.5 to 2 gm)
Skimmed milk	$1\frac{1}{2}$ oz (protein 1.5 gm)
Sugar	$\frac{1}{30}$ oz (carbohydrate 3 gm)

In the mixture, the ingredients will be combined in the amounts, *per kilogram of body weight*, given in Table 26.

TABLE 26—AMOUNTS FOR EACH KILOGRAM OF BODY WEIGHT

Cream	20.27 cc (fat from 3.3 to 4.4 gm)
Skimmed milk	100 cc (protein 3.5 gm)
Sugar	6.6 gm (carbohydrates 6.6 gm)

In underweight infants, the amounts would be calculated on the basis of initial weight at the beginning of feeding, but these would be increased gradually to the amounts necessary for a normal weight infant of the same age.

Example. It is desired to feed a 10-pound baby, fat, 20 gm, protein, 15 gm, and carbohydrate, 30 gm, the amount required for one day's food. These quantities would be supplied by cream, 4 ounces, skimmed milk, 15 ounces, sugar, 1 ounce, and water, 11 ounces, bringing the total fluid to 3 ounces for each pound. The small excess of protein in the cream may be considered negligible.

It will be noted that by considering the needs of the infant in terms of weight and forgetting the percentage content of the variable mixture, the danger of error is removed and the variation due to the individual physician is done away with. At the same time this method of feeding becomes much simplified and retains all of its flexibility.

There can be no doubt as to the accuracy of the modifications that can be obtained by this method of feeding. It has the disadvantage of requiring more calculation. In actual experience the disadvantage to healthy infants of a possible relative excess of protein in mixtures made with simple dilutions of whole milk has been exaggerated. Practical experience prevents convincing evidence that far more infants develop gastro-intestinal disturbance from feeding excessively rich cream mixtures. The greatest objection to high milk feeding is the infant can be constipated, stool, be  by sugar.

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SATURDAY, MARCH 24, 1923

DIET DEFICIENCIES AND IMMUNITY

Although the existence of deficiency diseases has become well established in recent years and has been exemplified with scientific precision in the case of at least scurvy and beriberi, the precise processes whereby the characteristic pathologic conditions arise are far from being solved. The instances mentioned represent clinically recognized maladies. It is more than likely, however, that less well defined symptoms have thus far escaped detection in the syndrome of effects attributable to faulty nutrition. The physiologists have demonstrated that when the diet is deprived partially or completely of an essential constituent, animals under experiment soon manifest the deficiency by a retarded rate or cessation of growth, by restricted propagation and by a general unhealthy appearance, so that if some indispensable food factor is withheld for a prolonged period, organic changes of a marked character may ensue.

It is quite possible, as Zilva¹ has specially emphasized, that, besides the more radical changes produced by deficient nutrition, decided modifications may take place in the body tissues and fluids which are not discernible macroscopically or microscopically, but which may nevertheless restrict physiologically the functions of the organism. In this connection arises the interesting problem whether the resistance to disease of the animal is in any way influenced by deficient nutrition. Zilva reminds us of the widespread belief that underfed persons are more susceptible to infection than well fed persons, and that when the former contract a disease they show less resistance and are more prone to succumb to it. But, he adds, terms like "malnutrition" or "underfed" are vague expressions and lack scientific definition. There is also no definite scientific evidence, even of a general character, to support this belief, in spite of its probability. If, however, there is a connection between imperfect nutrition and susceptibility to

disease, Zilva maintains that the subject becomes one of the utmost theoretical and practical importance.

When Zilva examined the possible effects of a series of diets, each of which was specifically deficient, no inequalities in the content of the agglutinins and amboceptors in the blood could be recorded in most cases. Thus, guinea-pigs fed on an unrestricted mixed diet, quantitatively restricted mixed diet and a scorbutic diet respectively, showed no differentiation in the amboceptor and agglutinin titers, and in the complement activity of the blood. And now these studies at the Lister Institute in London have been supplemented by the investigations of Findlay and Mackenzie² at the Royal College of Physicians' Laboratory in Edinburgh. They failed to find any decrease in the opsonic activity of the blood serum in animals receiving diets evidently deficient in respect to vitamins A, B or C. Furthermore, there was no evidence to suggest any decrease in the phagocytic activity of the polymorphonuclear leukocytes as the result of a diet deficient in vitamin C. These results harmonize with the contention of Bordet and others that the phagocytic power of the body appears, after all, to be a relatively stable function, and one not easily influenced by conditions that profoundly affect other vital activities.

THE TEST OF HYPERTHYROIDISM

The limitations of the so-called Goetsch test as an index of hyperthyroidism have already been pointed out in THE JOURNAL.³ This reaction consists in the response of patients to subcutaneous injections of small doses of epinephrin, a positive result being manifested by an increase in pulse rate and rise of blood pressure, exaggeration of tremor, palpitation and nervousness, appearing within a short time after the injection. The epinephrin was at first believed to produce sensitization of the organism so that a synergistic action of the thyroid secretion would manifest itself by pressor effects. Although Goetsch originally thought that the phenomenon might be of value in the diagnosis of thyroid disease by allowing a surplus output of thyroid hormone to manifest itself more readily, he later pointed out that the reaction, after all, is indicative only of alterations in the sympathetic system, that is, it becomes an index of sympathetic overstimulation.

In recent studies at the Department of Pharmacology at Columbia University, Lieb and Hyman⁴ have demonstrated anew that the reaction to epinephrin measured in the response of blood pressure varies

² Findlay G. M. and Mackenzie R. Opsonins and Diets Deficient in Vitamins. *Biochem. J.* 16: 574, 1922.

³ The Goetsch Test in Healthy Persons. editorial. *J. A. M. A.* 79: 136 (July 8), 1922.

⁴ Lieb C. C. and Hyman H. T. Studies of Graves Syndrome and the Involuntary Nervous System. IV. The Vascular Response of the Pithed Cat to Single Intravenous Injections of Adrenalin. *Am. J. Physiol.* 63: 60 (Dec.) 1922. V. The Vascular Responses of the Pithed Cat to Repeated Intravenous Injections of Equal Doses of Adrenalin. *ibid.* p. 68. VI. Attempts to Alter the Vascular Response of the Pithed Cat to Repeated Injections of Similar Doses of Adrenalin. *ibid.* p. 83. VII. On the Mechanism of Sensitization to Subcutaneous Injections of Adrenalin. *ibid.* p. 88.

¹ Zilva S. S. The Influence of Deficient Nutrition on the Production of Agglutinins, Complement and Amboceptor. *Biochem. J.* 13: 172 (July) 1919.

widely with the condition of the subject. This is contrary to the widespread belief that the circulatory system will respond with the accuracy of a chemical balance to any dose of epinephrin.⁵ These studies point to the frequency of "variables" in the involuntary nervous system not due to sensitization. They are frequently present when evidences of "tire" are present, and are definitely not associated with hypertonicity of the portion of the nervous system referred to.

Of foremost importance is the observation that the apparent "sensitization" by epinephrin may develop or persist even in the complete absence of thyroid glands. This fact at once indicates that the reaction is due to alterations in the peripheral structures of the involuntary nervous system rather than to changes in the thyroid. The demonstration that the involuntary nervous system is not a "constant" in its responses, and that the variations need not be due to sensitization by some artificially introduced variables such as the thyroid hormone, removes a fundamental postulate of the Goetsch test. It also jeopardizes the validity of the theory which holds that exophthalmic goiter is due to a synergism between the suprarenal medulla and the thyroid gland. As usual, the conflict of opinion is with theories of pathogenesis, not with the facts of direct observation.

THE BACTERIAL ACTION OF ULTRAVIOLET LIGHT

It has long been appreciated that light has potencies for good or harm, but it is only in comparatively recent times that the details of its effects have begun to receive serious scientific consideration. This awakening of interest has been due in part to the growing knowledge of various manifestations of radiant energy, and their application in various fields of human experience. A recent reviewer⁶ has remarked that although the physiologic effect of sunlight seems at first sight indefinite and of dubious importance, the action of far ultraviolet light on normal tissue, and the action of near ultraviolet and visible light under certain pathologic conditions, has been investigated enough to show that there are well-defined effects due to light, closely related to the physiologic results of exposure to radium and the roentgen rays. These results, she adds, are gradually assuming considerable importance in clinical medicine, and present theoretically an interesting but illusive problem in physiology.

Nearly half a century has elapsed since Downes and Blunt, in 1877, showed for the first time that sunlight retards the growth of bacteria, and proved that this was not due to heat, since the same result was obtained with tubes cooled in ice. Much emphasis has been placed, in a popular way, on the bactericidal action of light.

In their natural environment, micro-organisms may be temporarily but are not usually exposed to ordinary light. Some of them will at best only occasionally come into contact with the direct rays of the sun, for this reason it becomes all the more desirable to learn how these living forms react to the various sorts of artificial irradiation to which they can be exposed at the will of the observer. A recent investigation by Bayne-Jones and Van der Lingen⁷ at the Johns Hopkins University indicates that the bactericidal action of light is confined to the ultraviolet region of the spectrum. An increase in hydrogen-ion concentration of the fluids in which the micro-organisms were suspended during their exposure to irradiation with ultraviolet rays increased the velocity of the bactericidal action. However, neither temperature nor the hydrogen-ion concentration rendered bacteria sensitive to the longer wave-lengths of light. As the invisible roentgen rays and radium rays are known to destroy living tissues by long exposures, micro-organisms cannot be considered less resistant, although the bactericidal effect of such short rays as radium affords is still somewhat debated. The next step will be to learn more precisely to what degree and how ultraviolet irradiation may be employed to replace chemical antiseptics.

THE CARDIAC FEATURES OF VOMITING

A student beginning the study of medicine must marvel at the lack of knowledge that still attaches to some of the most common experiences in the routine of the physician. Vomiting affords an illustration in this connection. The symptoms have been known since physical manifestations were made the subject of medical observation, and emetics are among the oldest drugs to be employed by the physician. Although nausea and vomiting can be produced without any immediate contact of the emetic agent with the alimentary tract, physiologists have been slow to admit that the latter plays no part in the reception of the stimuli which bring about the act. It has been assumed, for example, that when substances taken in some way other than orally produce vomiting they do so by being excreted into the alimentary canal, and thus in ultimate analysis really act by producing local irritation there. Only in comparatively recent years has the existence of a true vomiting center in the neighborhood of the respiratory center of the medulla been more generally accepted.

The stimulation of the medullary center either directly or reflexly leads to nausea and vomiting. Apomorphin stimulates it directly, and consequently brings about emesis even after subcutaneous dosing. It is widely supposed that the substances which act

5 Elliott, J. *Physiol.* 44: 374, 1912.
6 Clark, Janet H. *The Physiological Action of Light*. *Physiol. Rev.* 2: 277 (April) 1922.

7 Bayne-Jones, S. and Van der Lingen, J. S. *The Bactericidal Action of Ultraviolet Light*. *Bull. Johns Hopkins Hosp.* 24: 11 (Jan.) 1923.
8 A good outline by Wilbert M. Jones, *Medical Age*, Amer. Soc.

reflexly to produce vomiting do so by irritating the alimentary mucosa. This is, of course, one of the ways in which emesis results. But Hatcher and Weiss⁹ have shown that intravenous injection of digitalis preparations produces vomiting in animals even when the entire gastro-enteric tract has been removed, but that the drug does not act emetically like apomorphin when applied directly to the vomiting center. Digitalis substances, therefore, do not exert their emetic action by direct stimulation of the center or through gastrointestinal irritation, but reflexly by the stimulation of sensory fibers in the heart. Severance of all nervous connections between the heart and the medulla stops the vomiting caused by digitalis products.

Similarly, Weiss and Hatcher¹⁰ have more recently demonstrated that the heart is the seat of reflex vomiting following the intravenous injection of tartar emetic. After gastro-intestinal administration, the path taken by afferent emetic impulses depends on the innervation of the organ concerned, passing sometimes by the vagus and sometimes by the sympathetic system. The coincidence of cardiac and emetic action in numerous drugs has thus served to direct attention to the heart as the probable seat of the emetic action of various substances. Consequently, drugs that block the impulses from the heart may often stop or greatly ameliorate existing emetic reactions.

Current Comment

THE SPLEEN AND RED BLOOD CORPUSCLES

The fact that splenectomy, either in youth or in adult life, is followed by few detectable changes in the physiologic reactions of the organism affected by the operation adds to the difficulty of deciding what the use of the spleen may be. It no longer satisfies the critical student to read that this organ is "the great blood filter purifying the blood in its passage by taking up the particles of foreign matter and effete red corpuscles." If there is normally a more or less continuous formation of red blood cells, a corresponding disintegration must be going on, so that no accumulation of erythrocytes ensues. Long ago it was maintained, by Hunter, for example, that the spleen is concerned with this work of destruction. Lately this view has acquired a new popularity, and found application in the treatment of certain types of anemia in which splenectomy is reported to have been beneficial by averting continued undue destruction of the red cells. Evidence for the destructive function is further reclaimed in the familiar appearance of fragments of erythrocytes in the spleen pulp. The destructive action of the spleen is further implicated in the studies of Pearce, indicating an increased resistance of the corpuscles to hemolysis after splenectomy. A special

instance has been described by Kolmer in their behavior toward venom which ordinarily easily hemolyzes the red cells. In the physiologic laboratory of the University at Groningen, Bolt and Heeres¹ compared the behavior of blood before and after contact with the spleen, under otherwise comparable conditions, to hypotonic salt solutions which would tend to lacerate the red corpuscles. The results show that the organ has the power of diminishing the osmotic resistance of the erythrocytes. These are prepared for hemolysis, which takes place partially in the spleen itself. According to the Dutch investigators, the point of attack of the hemolytic power of the spleen lies in the surface layers of the erythrocytes where the lipoids are concentrated.

THE COMPARATIVE ELIMINATION OF INORGANIC COMPONENTS FROM THE BLOOD

The application of chemical analysis to the examination of the blood has served to elucidate what the excretory functions actually accomplish for the body. As the circulating medium is the carrier of waste products to the organs of elimination, it became apparent long ago that inability to excrete them properly should result in changes in the composition of the blood. There is a growing realization that not all waste constituents in the blood are excreted with equal ease. For example, in 1916, Myers, Fine and Lough called attention to the fact that very high figures for uric acid may be noted, not only in cases of advanced interstitial nephritis, but also in the very early stages of the disease, before a retention of either the urea or the creatinin had taken place. It was suggested that, when symptoms of gout were absent, a high blood uric acid might be a valuable early diagnostic sign of nephritis, possibly earlier evidence of renal impairment of an interstitial type than the classic tests of proteinuria and cylindruria. What has proved to be true regarding a sort of selective capacity for the elimination of certain common organic constituents of the blood by the renal epithelium appears to apply somewhat similarly to some of the inorganic components that normally find their way into the urine. At any rate, Denis and Hobson,² in studying the various inorganic ions in the blood serum of patients with nephritis and cardiorenal disease, have noted an unmistakable tendency toward increased values for phosphate and sulphate, in contrast with sodium and chlorine. The latter two are excreted with great ease, and, even in the case of the badly damaged kidney, retention of these elements seldom occurs, in this respect they may be said to resemble creatinin. On the other hand, the sulphate ion is apparently excreted with difficulty, so that in kidney insufficiency the concentration of this fraction may increase enormously, in some cases to 3,000 per cent above the normal value, in this respect the sulphate ion may be likened to the uric acid fraction, although the percentage increases observed are far above any concentrations of uric acid so far reported. Hence Denis and Hobson incline to believe that the evidence that has been accu-

⁹ Hatcher P. A. and Weiss Soma. The Seat of Emetic Action of the Digitalis Bodies. Arch. Int. Med. 29: 690 (May) 1922.

¹⁰ Weiss Soma and Hatcher P. A. The Mechanism of the Vomiting Induced by Antimony and Potassium Tartrate (Tartar Emetic). J. Exper. Med. 37: 97 (Jan.) 1923.

¹ Bolt, N. A. and Heeres P. A. On the Influence of the Spleen on Red Blood Corpuscles. Biochem. J. 16: 754 (1922).

² Denis W. and Hobson S. A Study of the Inorganic Constituents of the Blood Serum in Nephritis. J. Biol. Chem. 55: 183 (Feb.) 1922.

mulating for some years would make the hypothesis of a selective activity on the part of the kidney for the inorganic constituents of the blood seem to rest on a relatively sure foundation

THE STORAGE OF VITAMIN A IN THE BODY

Among the various features of physiologic interest in connection with the modern study of the vitamins, the problem of their occurrence in milk has been outstanding. Scarcely more than a decade has passed since the existence of specific potencies indispensable to well-being was first recognized to exist in the secretion of the mammary gland. Meanwhile, it has become clear that the content of milk in some of the vitamins at least may vary widely. For the B factor the evidence is still somewhat conflicting, American investigators in general following the lead of Osborne and Mendel in being more skeptical than the English observers as to the occasional occurrence of marked enrichment of milk in this vitamin. With respect to vitamins A and C, however, it is generally accepted that the feed of the lactating animal may play an important part in modifying their presence in milk. Thus, in general, summer milk derived from cows in pasture tends to be superior in antiscorbutic potency to winter milk derived from animals living on air-dried roughages and grains that are poorer in vitamin C than are the fresh green feeds. The content of fat-soluble vitamin A in milk is also markedly influenced by the diet of the cows. Lately, Sherman and Kramer¹ of Columbia University have found that the storage of vitamin A in the body is markedly affected by previous conditions of the diet. Even at weaning time, young animals may already have a considerable store of vitamin A in the body, and thus be able to continue to grow for some time on a diet carefully freed from vitamin A but adequate in all other respects. The body can also store vitamin A at later ages. Sherman and Kramer remark that the differing stores of vitamin A in the bodies of experimental animals, even at early ages, has undoubtedly been a large factor, not fully appreciated, in previous experiments dealing with this vitamin, and in attempts to determine the vitamin A content of different foods. In the domain of infant feeding, it has a special bearing in relation to the transition periods when the young are being weaned to the artificial foods of later life. Some of the commonest of these, as the cereals, which often enter largely into the dietary of the very young, are comparatively poor in vitamin A. It is a great advantage to the young, therefore, to have a liberal factor of safety in a store of vitamin A in their own bodies. And here, in turn, the importance of a suitable diet of the mother during the period of lactation cannot be overlooked. The richness or paucity of her food in vitamins may have a cumulative significance for weal or for woe to the nursing offspring.

¹ Sherman H C and Kramer M M. Experiments on Vitamin A. *Proc Soc Exper Biol & Med* 20: 201 (Jan 17) 1923

Telescopes—Galileo's first telescope collected about eighty-one times as much light as the human eye. The Mount Wilson telescope, the largest in the world today, collects 160,000 times as much light as the human eye.

Association News

THE SAN FRANCISCO SESSION

Invitation from the Oregon State Medical Society

The board of councilors and members of the Oregon State Medical Society through the secretary, Dr. Otis B. Wight, extend a cordial invitation to Fellows and members of the American Medical Association who go to San Francisco on special trains to stop at Portland and be the guests of the Oregon State Medical Society during a day's excursion up the Columbia River Highway. The trip will require at least three hours each way, allowing time for dinner. Special trains arriving in Portland in the morning or by early afternoon will be met by members of the Oregon State Medical Society and automobiles will be available for their accommodation. The return to the trains will be in time for their departure at any time in the evening after 10:30.

No More Accommodations Available on New York Special

The train for the special twenty-five day tour from New York City to the meeting of the American Medical Association in San Francisco arranged for under the auspices of the Medical Society of the State of New York is already completely filled. Another train will be arranged for if 125 more subscribers can be secured. It will be necessary for applications for accommodations to be in not later than April 15. Applications should be sent to Mr. J. S. McAndrew, Tour Manager, Lifsey Tours, Inc., 1472 Broadway, New York, N. Y.

EDWARD LIVINGSTON HUNT
Secretary, Medical Society of
the State of New York

Post Convention Tour to Hawaii

In connection with the telegraphic invitation extended by Hon. Wallace R. Farrington, governor of Hawaii as published in *THE JOURNAL* March 10, the following comprehensive tour has been arranged:

Leaving San Francisco, night of June 29, the party will sail from Los Angeles, June 30, on the *Calaveras*. Visit to live volcano at Kilauea. Automobile drives round Honolulu and the island of Oahu. Reception by Governor Farrington. Visits to Kalahele leper receiving station and hospitals. Returning, arrive at Los Angeles, July 21. Total inclusive cost from Los Angeles back to Los Angeles \$415. Reservations and booklets may be obtained from Fred J. Hilton, 714 Marquette Building, Chicago, former Secretary, Hawaiian Tourist Bureau, who will personally escort the party to Hawaii.

ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE, PUBLIC HEALTH AND HOSPITALS

Held in Chicago March 5-6 and 7, 1923

(Continued from page 119)

MEDICAL EDUCATION

MARCH 5—MORNING (Continued)

Preliminary Report of the Committee on Trained Nursing to the Council on Medical Education and Hospitals of the American Medical Association

DR. ROBERT W. LOVETT, Boston. The growth of the profession of trained nursing has been so rapid and so extensive that it is impossible that its educational side could have kept pace with its numerical growth. In 1880 there were fifteen training schools for nurses in the United States with 323 pupils. In 1920 there were 1,755 schools with 55,000 pupils. The number of schools increased 116 times over and the number of pupils 170 times over between 1880 and 1920. Nor has the number of women applying for admission to training schools shown of a general decline from the high

entrance to the training schools of the state of New York for the three years ending July 31, 1920, 1921 and 1922

The educational training of the nurse as it at present exists in the United States is not standardized, systematic or uniform in the matter of requirements for entrance, length of the course, and methods of teaching. Those persons who live in the medical centers and who come in contact only with schools connected with the great modern hospitals can hardly form an idea of the conditions existing in the country in general away from medical centers.

DEFECTS IN TRAINING SCHOOLS

There are five defects in the training schools of today:

- 1 The course, on the whole, is unsystematized, unstandardized, and far from uniform in the different schools.
- 2 There is in general thought to be too little systematic instruction in practical work in most courses, and too much theory, and whether or not this is true, there is certainly a lack of correlation between the two elements.
- 3 Many of the teachers in these schools are poorly equipped.
- 4 There is a waste of time of pupil nurses in uneducational routine work.
- 5 Many schools are connected with hospitals where clinical facilities are utterly inadequate.

CORRECTION OF DEFECTS

The correction of the defects may be approached by one of three ways:

- 1 We may strive to raise the upper level of the profession by means of the development and extension of the university school of nursing.
- 2 We may attempt to define the lower level of what may be considered as the education of a bedside nurse, to attempt after defining it to raise this level and to prevent so-called training schools from continuing as such when they do not conform to reasonable prescribed standards.
- 3 We may attempt to do both—to define and raise the lower level by a standard minimum curriculum with measures for its enforcement, and develop the university school of nursing to educate more and better teachers to help in carrying this out, and to assist in graduate teaching.

In approaching this matter by any one of these ways, it becomes necessary to consider the following remedial suggestions: (a) the desirable length of course for the bedside nurse of private practice, (b) supplementary graduate instruction for advanced or special nurses, (c) instruction to provide for subsidiary nursing service. It is the opinion of the committee that any proper nursing education should be based on the completion of a four years' course in a high school. In only six states is this a legal requirement at present, whereas in twenty states one year in the high school or its equivalent is considered sufficient. In five states, a grammar school education is all that is required.

MECHANISM FOR CARRYING OUT RECOMMENDATIONS

A committee of this sort which suggests a scheme of improvement, and leaves the matter there, fails partly in its purpose unless it recommends at the same time a mechanism by which recommendations, if adopted, may be carried out. The committee is of the opinion that:

- 1 The primary requirement of the present situation is the formulation and adoption of a standard minimum curriculum for the training of the bedside nurse of private practice, that this should be formulated with great care, be absolutely definite and simple, prescribe the percentage of time to be allotted to each subject, the character and sequence of the instruction and provide for practical experience as well as theoretical instruction. This curriculum should be such that it could be carried out by relatively small hospitals and hospitals away from medical centers. If too elaborate, it will be useless.

- 2 A committee for this most important and responsible work should be appointed containing in its membership physicians who are competent clinical teachers, representative nurses and at least one educator, neither a physician nor a nurse. This committee should be arranged for by the American Medical Association in conjunction with the National League of Nursing Education, each having equal representation and appointing its own representatives. The

educator should be selected by the other members of the committee when appointed.

- 3 After a proper time, training schools which do not conform to the scheme outlined by such a committee should be classed and published as schools not accepted by whatever body or committee or organization is made responsible for the matter.

- 4 The educational requirement for admission to the training school shall as soon as possible be made four years in high school.

- 5 The course for the bedside nurse of private practice should be made two years and four months.

- 6 Necessary changes in legislation should be advocated in those states requiring the three year course.

- 7 Subsidiary nursing should be favored and adopted, and be subject to the same committee or organization recommended (in paragraphs 2 and 3, page 29), which should formulate for it a standard minimum course, of the same simple character as the one described for the training of the bedside nurse.

- 8 Postgraduate facilities should be provided for the nurse who has graduated from the two year and four months' course, and who desires to qualify herself for special nursing or for teaching, and the university school of nursing can be of much help in raising the standard of teaching.

- 9 The nurse's training must be regarded as a serious educational problem requiring more of her time for educational work with some reduction in the waste of her time in noneducational ward routine.

- 10 Better standards of teaching will be required in the improved schools from both physicians and nurses.

- 11 The last two mentioned needs will mean increased expenses to hospitals maintaining training schools, but in the end more serious results and greater expense will accrue to these hospitals unless something is done to remedy the present and increasingly chaotic conditions dealt with in this report.

Minority Report of Committee on Trained Nursing

DR. RICHARD OLDING BEARD, Minneapolis. The proposal of the majority of your committee that the American Medical Association should, at this late day, initiate a new movement of its own for the futile repetition of an already fulfilled purpose—the formulation of a model curriculum, will be unwelcome to the profession of nursing. Even were it a necessary or a desirable thing to do, the work to be studied is nursing and not medicine, and concerning the greatly major part of it medical opinion would obviously be of little service. It is neither necessary nor desirable. About the last thing that nursing education needs is the multiplication of model curriculums. What it does need is a broad, educational policy which may be brought to bear on the schools of nursing through the mechanism of their classification, to the higher levels of which they will then strive, in the interests of their own survival, to reach. The majority's proposal to preempt an equal representation with the nursing profession on a working committee is doubtfully politic. The medical profession of today must realize that it may fitly offer, while the profession of nursing may fitly accept, its friendly counsel in matters of nursing education, but it is no longer in a position, if it ever possessed the right, to dictate its conditions or to determine its limits. Its assumption of that right cannot fail of resistance from the profession of nursing. The horoscope of the nurse's training has permanently shifted. Its ideals have come under educational inspiration and control. Naturally, a claim that is based solely on a tradition of the past and has too often served as the excuse for the exploitation of nursing students must necessarily, under these new conditions be denied, and it is a strictly ethical denial.

The minority of your committee desires further to recommend the suspension at this time of any action looking to the training and legalization of subsidiary nurses. Arguments for this recommendation may be briefly stated. The argument of public interest is paramount. An inferior type of semi-educated nurse may not be offered to large classes of people who are normally self-dependent but are economically disabled by sickness, without incurring a sense of social

injustice they will resent. That resentment will be reinforced by the fact that the indigent sick receive, by grace of public taxation, a better type of nursing service than these people may command. The corollary of the proposal would lie in the offer of a second hand doctor at a diminished fee. The one suggestion leads straight in the direction of state nursing the other in the way of "state medicine." Let us not tempt either. Social machinery may be directed by which, through better hospital service, through systems of hourly nursing, through nursing bureaus publicly maintained efficient nursing at graduates fees may be secured. Cooperation of the nursing profession to this end is to be expected, but responsibility for these measures should not be left to it alone. It is not in the interest of the public that inadequately trained nurses be placed in charge of convalescence and chronic cases. Too many sources of danger arise during convalescence, while the chronic patient usually presents a most difficult problem for the best educated nurse.

The major consideration on which the proposal of the subsidiary nurse has been based is an economic one. The majority report of your committee and the findings of the Rockefeller survey alike suggest that legislation to control the name, the training, the practice and the wage of the subsidiary nurse will be indispensable. The theory of the law and the results of practical experience go to show that no constitutional measure can be devised that will efficiently tag the subnurse, that will determine her degree of education more or less that will keep her where she belongs in service, or will prevent her demand for wages as high as the graduate nurse gets. The legislative committee of the Minnesota legislature now in session has refused to provide for the registration of "subnurses" and it is quite clear that public sentiment is not back of the project.

The place of training of the subsidiary nurse is an unknown quantity. Her training in the same hospital with the regular nurses is impracticable. The proposal to train her in inferior hospitals unfit to educate graduate nurses, will be unacceptable because it will mean the self-acknowledgment of their inferiority and will react on their supply of patients. It is a significant thing that at the last annual meeting of the American Hospital Association a number of hospital administrators supported the subsidiary nurse in theory, but that all of them sidestepped the responsibility of her training. They are not to be blamed. It would be an expensive and unrewarding task. The ethical error of the proposal of the "subnurse" lies not alone at the point of nursing service, it lies at the heart of nursing education. The women are not to be found who, in any number or with any permanent purpose will be content with a reparation and a position inferior to that which another group of nurses receives and occupies. The minority of your committee recommends then that the proposal be disapproved by the Council.

DISCUSSION ON PAPER OF DR RYERSON

DR C R BARDEEN, Madison Wis. The student should have some kind of bird's eye view of the human being as a whole. He needs to have more than a knowledge of anatomy, physiology, chemistry and pathology as early as possible because he is dealing with individuals and not wholly with systems of organs. I should like to see the experiment suggested by Dr Ryerson tried out. Something along the line we have been giving is better than a purely vertical scheme, although it is well to study the true association of the essentials with what are not essentials for practitioners of medicine and try to stick to essentials and not lead the student astray by too many details that are not essential. There should be something to stimulate the student's understanding from the beginning that he is not to study anatomy so many hours a week and physiology so many hours a week, but that he is studying the human organization as a whole in relation to health and disease.

DR G CARLY ROBINSON, Baltimore. Correlation of the work in the various departments is the dominating idea of curriculum makers at present. In the arrangement of the teaching plant we have one important factor in bringing about this desirable correlation—a point I am going to discuss tomorrow. Another point of considerable importance is the

type of training and interest which teachers in the clinical departments have in the fundamental departments. It will not make much difference if we have correlation of the physical plant, unless the teachers of the fundamental and clinical subjects have a real interest in each other. We are urging that the laboratory men have an interest in the work of the clinics, and I feel that those who are teaching clinical subjects should have an equally clear understanding of the problems and progress of the work in the laboratory, so, after all what we want is intellectual correlation. That can be brought about fairly satisfactorily with the present type of curriculum and it might be ideally done with the type of curriculum presented today, but I feel that there should be an effort to bring about more intellectual correlation of the different departments than we have at present, so that a back and forth flow of ideas will be definitely and conscientiously presented to the students as they go through the courses.

DR WALTER L BIERING, Des Moines, Iowa. While the plan presented by Dr Ryerson appears to be novel to our American system of education it is distinctly an English method and has not only been adopted by English schools but is now being required by the General Medical Council of Great Britain. The council makes a definite requirement that there shall be a distinct correlation between the fundamental sciences and the clinical branches. For instance, in the third year it requires one hour a week in each of the three subjects, anatomy, physiology and pathology and while it does not require that there shall be the same number of hours during the fourth and fifth years, it suggests that there shall. It especially suggests the introduction of clinical courses in the second year. In the examinations at Edinburgh last summer and in the examinations of the triple qualification board of Scotland, which is conducted in medicine and surgery, definite examinations in applied anatomy, applied physiology and applied pharmacology as well as surgical pathology are also required. The candidate is required to outline in the examination in clinical medicine the heart, the lungs, the liver, the spleen and various other anatomic areas. The same thing is required in surgery. The National Board of Medical Examiners in this country has been trying to copy the same method by having in its examinations applied anatomy, applied physiology, applied pharmacology and surgical pathology.

DR ALEXANDER PRIMROSE, Toronto. Most schools today attempt to teach the primary subjects early in the course and in the final years to apply them. The thing now suggested is to teach the clinical years in correlation with the primary departments. Dr Ryerson has spent much time and labor on this subject and his colleagues are sympathetic but we have not as yet attempted to adopt this method. I do not think it could succeed unless a large number of medical faculties of this country should agree to adopt a similar scheme. I hope this subject will be seriously considered and be brought to an issue as to the determination on the part of medical faculties to accept the principle or not.

DR J PARSONS SCHAEFFER, Philadelphia. It seems unfortunate that the terms 'preclinical and clinical' ever came into being. I want to emphasize what Dr Bardeen has pointed out that certain things must be done first. We cannot do everything at the same time and I believe that anatomy of the human body should antedate everything else particularly in analysis of it. Granting that this may be true and correct it would then follow that we should do something, to bring home at once to the students the why of everything and for that reason certain clinical subjects should be taught in the freshman year. It must be done to create interest and not have the students study anatomy merely to complete the course to pass an examination and then to forget it. I know of no better way to correlate the subjects than for the surgeon and the internist to present their cases from the point of view of anatomy and physiology and the particular thing they have in mind. At present it is not so presented. An internist or a surgeon jumps good and hard on a student if he does not know his anatomy. An ophthalmologist strikes a student good and hard if he does not know his anatomy which we are unable to give. The student is at our disposal. The solution is to have the student

to bring something into the freshman year that will create interest and show the why and wherefore

DR VICTOR C VAUGHAN, Chicago Some one spoke about giving lectures on diabetes to freshmen students How can you give such lectures with any degree of satisfaction when a student has never seen the pancreas and does not know where it is located? He has no idea of the histology of the pancreas It is perfectly absurd to talk about the islands of Langerhans to a freshman who has never made an observation, and who does not know which end of the microscope to look through Medicine, as I have defined it several times, consists of those facts culled from the various sciences which can be used in the prevention or cure of disease The medical student does not know the fundamental sciences It may be I am an old fogey, but I would prefer to see the system that has been outlined tried in some school in which I am not interested

DR LOUIS F GERMAIN, Milwaukee I think we all agree that anatomy, physiology and chemistry should be taught during the entire medical course The question is how to do it There is a great deal of anatomy, physiology and chemistry which is only of academic rather than practical value, but it must be taught It is not that we do not teach anatomy, physiology and chemistry right, but that we do not continue teaching these branches through the entire medical course It is up to the clinician to continue teaching applied anatomy and applied physiology during the entire medical course A student who comes to us at the end of the fourth year has generally forgotten his anatomy and physiology Who is to blame for it? Not the anatomist or physiologist, but the clinician He has not kept up with the teaching of these subjects

DR HENRY PAGE, Cincinnati To lay down a curriculum with 4,000 hours, as suggested in the Toronto scheme, however admirable it may be in some respects, is going too far in the way of rigidity from which we have been trying to escape One reason why the clinician has not kept up with teaching in anatomy is that the machinery does not exist to do it We know that the amount of anatomy which remains with a student after the first year, much less the second and third years, is practically a negligible quantity When he comes to applied science he has lost or forgotten all his anatomy, and has to learn it over again or never does learn To correct that, the student should apply his anatomy as a subject relating to medicine

We have introduced into our school a course in anatomy called the anatomy of physical diagnosis, a rather strange title, but in that course the student is brought in contact with the clinician, and we have been trying to get the best clinician possible to teach that course Our full-time professor of medicine (Dr Roger Morris) thinks the course so important to the students that he himself is teaching it

DR A C ABBOTT, Philadelphia I am profoundly grateful to Dr Ryerson for the concrete scheme he has brought before us As has been voiced here during the last two years, many are dissatisfied with the experiment that has been in progress for fifteen years, although they are just starting it in France as a new thing It is essentially what we started when I began teaching, and has gone from bad to worse and we are hoping to get rid of it I refer to the detached teaching of the sciences separate from their clinical application Any plan is wrong that does not constantly convince the student that he is studying medicine I can understand the fascination interest, and pleasure that the various special branches give to him, but if he is permitted to study them in a detached way, he does not get a comprehensive view of medicine and does not leave school a competent practitioner of medicine—the purpose for which medical schools are organized

DR GEORGE E. DE SCHWEINITZ Philadelphia We are all agreed that good as it has been and excellent as the teaching is the medical curriculum must be improved An investigation similar to that referred to by the chairman made with medical students in the school in which I have the honor to teach, brought out the following objections to the present curriculum (a) Lack of correlation between one subject and another, (b) inability to understand why certain things are taught, (c) inability to understand why so much of certain

branches is taught The only way these doubts can be overcome is by better cooperation between the teachers of the various branches No single branch should be considered as finished and then locked off, but should be carried on through the entire curriculum by the men most interested, whether it be medicine, surgery, or the special branches Take my own branch, ophthalmology It is impossible to turn out a medical student as a specialist It is wrong We can more easily make the student understand why any subject is a part of the curriculum, if there is a close cooperation of the fundamental and the clinical branches We are all anxious to improve the curriculum and to meet it in all the ways suggested here, but I am reminded of what a distinguished educator in this country said not long ago "It is about time we take up the teachers and straighten them out" There are lots of teachers in medical schools, admirable men, wise, well instructed, excellent, but they do not teach students to the best advantage Being a pioneer myself in that respect, I speak with authority Teaching is a very important part of our business today, and while we are anxious to improve the curriculum, we must also try to improve the methods whereby that curriculum is interpreted to the students who wish to go out as the finished product of our efforts, and that, after all, is what we are trying to do

DR E STANLEY RYERSON, Toronto Preventive medicine was purposely introduced into the first year to show the student at the beginning of his course that the prevention of disease is just as important as its cure If he acquires this idea at the beginning and continues it throughout the course, he is going to have an enormous influence, when he enters practice, in forwarding all the various public health movements In working out the details of a revised curriculum, it would be most essential to have the intellectual correlation between the teachers of the various departments as spoken of by Dr Robinson

(To be continued)

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Oil Donated for Mosquito Eradication—The Standard Oil Company has donated 1,000 gallons of oil for use in the mosquito eradication campaign that will be conducted by the state department of health of Alabama this spring Other oil companies have indicated that they will donate oil for the same purpose

Chiropractor Convicted—Reports state that P R Ritchie, a chiropractor of Mobile, was convicted in the circuit court by a jury, February 21, of practicing medicine without a license, and was fined \$50 and costs In default of payment of the fine, the defendant was sent to the county jail for twenty days

ARIZONA

Maricopa County Medical Society Aids "Hygeia"—The Maricopa County Medical Society with headquarters at Phoenix, has sent in 120 subscriptions to *Hygeia* including hotels, clubs, schools, colleges, ministers, physicians and laymen interested in public health

ARKANSAS

Catholic Hospital for Eldorado—A new Catholic hospital will be erected at Eldorado at a cost of \$40,000, it is announced The building will contain a charity ward for the housing of oil field workers who may be injured in the course of their work

Insane Persons to Be Kept in Jails—Dr C C Kirk, superintendent of the State Hospital for Nervous Diseases, Little Rock, has requested the county judge and sheriff to commit all mentally deficient persons in their jurisdiction to the county jail in future, instead of making application for their

admission to the state institution because of the overcrowded condition of the hospital. Dr Kirk states that the institution now is taxed beyond its capacity, with a total of 2036 inmates. The normal capacity is 1,850.

Medical School Bill Indefinitely Postponed—The Arkansas senate, February 28, postponed indefinitely a bill creating a board of five physicians to administer the affairs of the University of Arkansas Medical Department, Little Rock. It was charged that the bill was intended to transfer control of the school from its present dean to another physician. Following this action, the appropriation bill for the school was called up, and Senator Norfleet sought to amend the appropriations by reducing the salary items from \$36,500 to \$15,000. The motion was lost, and the body, sitting as a committee, recommended the passage of the appropriation bill as it stood.

CALIFORNIA

Extension of County Health Service—A new branch health unit has recently been opened by the Los Angeles County Health Department to serve Alhambra, San Gabriel and El Monte. Dr A. S. Baker, formerly of Seattle, has been appointed health officer for that district. A model hygienic laboratory is being installed which will make the usual health department laboratory tests for physicians and the general public. Plans are now under way for the establishment of a community health center for Alhambra, San Gabriel and El Monte, in connection with the new office. A dental clinic and a babies' clinic will be established in the new unit.

Hospital News—The Santa Fe Railroad will erect a hospital at Needles as part of its \$5,000,000 development program in southern California. Because practically the entire population of Needles is dependent on the railway, the hospital will serve the city virtually as a public institution. Ground was broken, March 1, for the new \$600,000 Mater Misericordiae Hospital to be erected in Sacramento to replace the present wooden structure on R Street. The new hospital, which will be six stories high, will be in the form of an X. The site comprises 8 acres. Excavation work on the hospital to be erected at Bakersfield for Kern County, at a cost of \$450,000, was started the first week in February. Work on a new 200-bed hospital, to be erected in San Diego by the Sisters of St. Joseph, on a new site on Fifth Street, will start in April. The present hospital site on University Avenue will be sold.

CANAL ZONE

Motion Pictures for Lepers—Thomas Meighan, a motion picture actor, has donated a projecting machine for the lepers in the colony on Canillo Island off the coast of Panama. The Paramount Company will supply films at intervals.

CONNECTICUT

Personal—Dr. Edwards A. Park, professor of pediatrics at the School of Medicine of Yale University, addressed the New England Pediatric Society at the Boston Medical Library, Boston, March 9, on "Special Roentgen-Ray Diagnosis of Rickets, Syphilis and Scurvy." Dr. Park addressed the New York Society of Orthodontists at Vanderbilt Hospital, New York, March 10, on "Facts About Children of Practical Importance to the Orthodontist."

Yale University News—The Sterling Chemistry Laboratory, a new \$2,000,000 structure, will be formally dedicated, April 4, on which day in 1804 Benjamin Silliman, the first professor of chemistry at Yale, delivered his first lecture. English, Scotch, French, Italian, Dutch and Canadian universities will be represented by delegates. The dedication will take place during the annual session of the American Chemical Society in New Haven. The Sterling Hall of Medicine, the next unit to be completed under the fund made available by the bequest of John W. Sterling, is progressing steadily. Cheney Brothers, silk manufacturers of South Manchester, have offered the sum of \$1,000 yearly to Yale University for two years, the money to be used for a fellowship in organic chemistry in the graduate school. This fellowship will be known as the Cheney Fellowship in Organic Chemistry, and will be awarded to a graduate student who has demonstrated the ability to pursue work leading to the degree of doctor of philosophy.

DISTRICT OF COLUMBIA

Smithsonian Institution—Mr. Henry White has been reappointed regent of the Smithsonian Institution, Washington. Frederick A. Delano has been appointed to succeed the late John B. Henderson and Irwin B. Laughlin to succeed the late Alexander Graham Bell.

ILLINOIS

Physician Fined for Violating Harrison Narcotic Law—According to reports, Dr. David H. Worthington, Aurora, aged 71, was found guilty of violating the Harrison Narcotic Law in the federal court, Chicago, March 9, and fined \$100.

Hospital News—A fifty-bed hospital is being erected by the Ingalls-Shepard Forging Company for the city of Harvey. The institution will cost \$250,000. Lodges, fraternities and social societies will raise \$20,000 for the furnishings and equipment. St. Mary's Infirmary, Caro, has recently added an annex for tuberculous patients, a nurses' home and a new wing to the main hospital building at a total cost of \$225,000. A new three-story addition will be erected at St. Vincent's Hospital, Taylorville, at a cost of \$75,000.

Schick Test for Inmates of State Institutions—Under a cooperative arrangement between the state departments of public health and welfare, a campaign is on foot for applying the Schick test to inmates of state institutions. The work will be carried out under the direction of the health department, which will also furnish toxin-antitoxin for the immunization of all those giving positive reactions. The boys' school at St. Charles carried out the plan some time ago, and all new-comers are now tested on arrival, and immunized when nonimmune to diphtheria. During the week of March 11-17, the 2,000 inmates of the Lincoln State School and Colony were Schick tested, and follow-up work will proceed immediately. Other state institutions in which danger from diphtheria exists will be treated in like manner.

Tuberculosis Sanatorium Survey—A field physician from the state department of public health has recently completed a survey of the eight county tuberculosis sanatoriums now in operation in Illinois. The findings show a maximum capacity of 306 beds. The average number of patients cared for in the eight institutions is 251, while the average cost of maintenance each month for all the sanatoriums is \$19,200, or slightly more than \$76 a month for each patient. The survey showed further that three of the sanatoriums hold diagnostic clinics, all but one conduct dispensary service, and all but two carry on, in some measure at least, county tuberculosis and public health work. The lowest appropriation for any of the sanatoriums for 1923 is \$10,000, but the total amount available in that instance is nearly \$30,000, a contract with the U. S. government with reference to tuberculous ex-service men making up the difference. All the seven other sanatoriums have appropriations for 1923 ranging from \$25,000 to \$40,800 for maintenance and in two cases extra appropriations for building.

Chicago

Illegal Practitioner Fined—It is reported that "Prof." J. B. Cottage, who maintained an office on West Madison Street, was fined \$25 and costs for practicing medicine without a license by Judge Adams in the municipal court, March 13. Cottage, it is alleged, collected thousands of dollars from his patients. The judge ordered the "professor" to leave the city.

Personal—Dr. Frank Smithes has resigned as gastroenterologist and attending physician to the Augustana Hospital to assume the duties of physician-in-chief and head of the department of internal medicine at St. Elizabeth's Hospital. Dr. Alfred A. Strauss addressed the Vermilion County Medical Society at Danville, March 6, on the subject of "The Surgical Treatment of Gastric Ulcers."

Medical Student Arrested—Reports state that "Dr. Thomas B. Bondus, with offices in the Kesner Building, was arrested March 2, on charges of practicing medicine without a license. Bondus is said to be an osteopath who claims he is studying medicine. According to records, Bondus studied medicine at the Hahnemann Medical College and Hospital, Chicago, as a third-year student, 1921-1922, but never graduated.

Society News—At a meeting of the Laboratory of Surgical Technique of Chicago, March 22, Dr. Leon Asher, professor of physiology at the University of Bern, Switzerland, spoke on "The Physiology of the Thyroid Gland from the Clinical Standpoint." Dr. A. J. Ochsenrider presided. At the fifty-sixth regular meeting of the Chicago Society of Internal Medicine, March 26, Dr. J. Curtis Ivester, St. Louis, will speak on "The Pathways of the Mediastinum, Lungs and Pleura."

Conference on Hospital Service—At a meeting of the American Conference on Hospital Service, held in Chicago, March 5, the following officers were elected for 1923: President, Dr. Frank Bilb; Vice President, Dr. Andrew R. Warner; Secretary, Dr. J. C. ...

New York, and treasurer, Dr Harry E Mock, Chicago. Dr Fred C Zapffe, Dr Linsly R Williams and Miss Sarah B Place, R N, Chicago, were elected to the board of trustees (term expires 1926).

Joint Clinical Meeting—The Chicago Ophthalmological Society and the Chicago Laryngological Society will hold a joint clinical meeting, April 16-17, under the presidency of Dr Robert von der Heydt. The first day will be devoted to clinical presentations at the various ophthalmic clinics, and the second day to work at the otolaryngologic clinics. A banquet will be given at the Hotel Sherman, April 16, to which all ophthalmologists and laryngologists are invited. Dr William Lemuel Benedict, Rochester, Minn., will address the meeting.

City to Recognize Service of Physicians—The city finance committee, March 15, approved recommendations of Dr Herman Bundesen, health commissioner, that "as an act of courtesy" physicians who are aiding the health department as a consulting staff be placed on the city pay roll at \$1 a year. Dr Bundesen stated that these men are giving their time free in the interests of public health, and their services could not be bought by the city. There are 100 on the list, among them being Drs Louis E Schmidt, Joseph B DeLee, David S Hillis, Isaac A Abt, Arthur I Kendall, Ludvig Hektoen, William A Evans, John Dill Robertson and Julius H Hess.

IOWA

Des Moines Subscription to "Hygeia"—The city of Des Moines has sent in 166 subscriptions to *Hygeia*, including physicians, ministers, teachers and laymen in the community.

Hospital Plans—A campaign to collect \$150,000 has been inaugurated to erect a new building at St Luke's Hospital, Macon City. Ground for the new institution will be broken, April 8. The entire cost of the structure is estimated at \$600,000. The contract has been let for the new \$275,000 addition to the Mercy Hospital, Cedar Rapids.

MARYLAND

Maryland Psychiatric Society Plans Clinic—At a special meeting of the Maryland Psychiatric Society held at Athol Sanitarium, March 13, announcement was made of the opening of a mental hygiene clinic about April 1, at the University of Maryland. It was also decided at this meeting to bring to the attention of the next general assembly, the importance of establishing a city psychopathic pavilion in Baltimore at a cost of about \$300,000, until such provision is made by the legislature, advice regarding treatment to early mental cases will be given at the proposed mental hygiene clinic. The following program was presented "A Mental Health Clinic," by Dr Arthur P Herring, commissioner of mental hygiene of Maryland, "Medical Aspects of a Mental Health Clinic," by Dr Ross McC Chapman, superintendent of Sheppard and Enoch Pratt Hospital.

Children's Clinics for Baltimore City—Mrs Henry Barton Jacobs has turned over to Baltimore and Dr William S Baer for child welfare work, the Robert Garrett Hospital for Children which has been closed since the death of Dr Walter B Platt, formerly physician in charge. Dr C Hampson Jones, commissioner of health, will establish there six free clinics—tuberculosis, dental, eye and ear, nose and throat, child welfare and a Schick, or antidiphtheria, clinic. Dr Baer will maintain beds for the preliminary examination and treatment of children in connection with his orthopedic work. He will work independently, but there will be at all times cooperation between him and the Baltimore Health Department. Mrs Jacobs will maintain the hospitals at her own expense and the city will provide the health department with funds for the employment of three physicians at \$1,000 each, and for such equipment as may be necessary. The clinics will be open by May 1. Dr John E O'Neill will have general charge of the tuberculosis clinic with a specialist assigned to assist him. The other appointments have not been made.

MICHIGAN

Midwives in Detroit—The Detroit Department of Health states that during the last three years permits have been refused or revoked for about 300 midwives. Nearly 180 midwives were at work in Detroit, a few years ago. Following strict examination and inspection by the health department there are only forty midwives with permits now practicing.

MINNESOTA

Liquor Permits Revoked—According to reports, twenty-five physicians in Minnesota have had their permits to prescribe liquor revoked for abuse of the privilege. It is stated that, of nearly 5,000 prescriptions filled in Minneapolis, 50 per cent were issued to fictitious names.

MONTANA

Sterilization Bill Signed—Governor Dixon, March 15, signed the eugenic sterilization bill, passed by the legislature recently. This bill provides for the sterilization of all idiots, feeble-minded persons and epileptics confined in institutions, on consent of the guardian or custodian.

Conference on Rocky Mountain Spotted Fever—Dr W F Cogswell, secretary of the Montana State Board of Health, has issued invitations to the health officials of the Rocky Mountain states, for a conference on the control of Rocky Mountain spotted fever, which is most virulent in the Bitter Root Valley, Montana. The disease, however, has been reported also in Wyoming, Utah, Idaho, California, Oregon and Washington.

NEBRASKA

Physicians' Licenses in Peril—It has been discovered that every license issued since the passage of the Code bill, in 1919, may be declared illegal should the issue be carried to court, it is reported. Governor Bryan found that the Code Law nullified the act creating the state medical advisory board which has been issuing medical licenses for nearly four years without legal authority. When the board is again legalized by an act to be presented at the present session of the state legislature, it is planned to issue a blanket order affirming the legality of all physicians' and surgeons' licenses issued within the last three and one half years.

NEW MEXICO

Personal—Dr Eugene William Fiske, Santa Fe, has resigned as penitentiary physician following four years of service.—Dr William M Lancaster, Clovis, has been appointed health officer of Curry County, to succeed Dr George K Maynard.

NEW YORK

State Society Opposes Antitheroin Bill—The Medical Society of the State of New York has announced its opposition to the bill introduced by Senator Bloch prohibiting the sale or manufacture of heroin in the state of New York. Dr James N Vander Veer, chairman of the legislative committee of the society, informed Assemblyman Duke, chairman of the Assembly Codes Committee, that the Medical Society of the State of New York wishes to be heard on this measure.

Antivivisection Bills Killed—The Assembly Codes Committee, March 14, voted unanimously to kill the Cotillo-Leininger antivivisection bills. One bill purposed to prevent "experimentation" on children, and the other would have prevented experiments on dogs. Among those at the hearing who opposed the antivivisection bills, March 13, were Drs Simon Flexner, William H Park and Frank D Jennings, representing the Medical Society of the State of New York.

New Chiropractor Bill—A bill aimed at chiropractors was introduced into the legislature, March 9, by Assemblyman Dr H W Lattin of Orleans County. It amends the public health law by providing that a person convicted of practicing medicine illegally may be punished by a fine of \$50 or imprisonment of not more than six months, or both. He is also liable for an additional penalty of \$500 for each offense, to be recovered by an action brought by the attorney general.

Professor Frankl Lectures—Dr Oskar Frankl, professor of pathology, the University of Vienna, delivered the first of the spring series of ten practical lectures given under the auspices of the Kings County Medical Society, at Brooklyn, March 9. Dr Frankl's subject was "The Endocrines." Beginning March 12, he will lecture in the Hoagland Laboratory, Brooklyn, from 4 to 6 o'clock daily until the end of the month. A similar course at Cornell University Medical College in Manhattan will be conducted simultaneously. During April and May, Dr Frankl will conduct courses in St Louis and Chicago.

Plan to Improve Outpatient Service in Pediatrics—The section on pediatrics of the Associated Out-Patient Clinics of New York has, through its executive committee, been working out plans for improving outpatient service in pedi-

atrics The children's medical division of Bellevue Hospital was chosen as an institution in which to demonstrate a well-rounded pediatric service, and the demonstration was begun February 1. Unity between the inpatient and outpatient service will be possible by the transfer of records between ward and outpatient department. A plan for the study of results in pediatric outpatient service is also being tried out. Reports of the demonstration at Bellevue and the plan for studying results will be published for the benefit of those interested in pediatric outpatient service.

Bill to Extend Workmen's Compensation—A bill has been introduced into the legislature which aims to bring all individuals or firms employing two or more persons under the workmen's compensation insurance act. The measure has been endorsed by the state federation of labor and the American Association of Labor Legislation. Under the proposed bill, physicians, lawyers and any other person employing two or more stenographers would be compelled to take out workmen's compensation insurance. The sponsors of the bill call attention to the fact that in many instances the courts have awarded heavy damages, which the small employer of labor has had to meet. There are several other measures proposing changes in the workmen's compensation law before the legislature. One bill, known as the Lacey O'Conner measure, greatly increases the awards that can be made for permanent or partial disability sustained in industrial plants. Another bill increases the waiting period for filing claims from seven to fourteen days, and it is contended that this will increase claims by 17 per cent. A third bill reduces the noncompensated waiting period in industrial accidents from fourteen to seven days, and provides for compensation from the date of the accident if the period of disability extends over twenty-six days instead of forty-nine days.

Proposed Amendment to Public Health Law—A bill entitled "An Act to Amend the Public Health Law in Relation to the Conduct of Medical Examinations" provides that the state board of medical examiners shall consist of nine or more members, one third to be annually appointed by the board of regents. It raises the fee for examination to \$35 and provides that the candidate must be a citizen of the United States. It lengthens "a satisfactory course" to eight months. It further provides that, in lieu of the first two years of the medical course, the regents may accept evidence of graduation with the degree of bachelor or doctor of dental surgery from a registered dental school, if the requirements are essentially those of the first two years in medical school. The subjects of hygiene and sanitation are omitted from the list of subjects in which the regents may make conditional admissions to examination. The act would admit to examination a candidate who has received the degree of bachelor of medicine from a recognized school of medicine in this country or in Canada or from a medical school in a foreign country maintaining a standard not lower than that prescribed for medical schools in this state. The examination, according to this amendment, will be held three times annually, and the regents may accept, in lieu of their examination the certificate of the National Board of Medical Examiners. Other portions of the bill have been left intact.

New York City

Harvey Society Lecture—The ninth Harvey Society lecture will be delivered by Dr. John Howland, professor of pediatrics, Johns Hopkins University, Baltimore, at the New York Academy of Medicine, March 31. His subject will be "Rickets."

Personal—Milton C. Whitaker, for six years professor of chemical engineering at Columbia University, has been awarded the Perkin medal presented annually for the most notable achievement in applied chemistry. The award was made in recognition of a series of achievements in the continuous production of ethyl acetate made by Dr. Whitaker and a corps of research chemists working under his direction. —Dr. Charlton Wallace has resigned as surgeon in charge of the Reconstruction Hospital, Central Park West. —The Brooklyn Chapter of Hadassah gave a reception for Dr. I. M. Rubinow, who has just returned from Palestine where he was for four years director of the Hadassah medical organization. The occasion marked the opening of the Hadassah campaign to raise \$100,000 for nonsectarian medical work in the Holy Land. —Dr. Bronson Grothers of Harvard University read a paper on "The Intracranial Mechanism of Labor and Its Relation to Later Disabilities in the Child" before a joint meeting of the section of obstetrics and gynecology and the section of pediatrics of the New York Academy of Medicine, March 8.

OHIO

Muskingum County Academy of Medicine Aids "Hygeia"—The secretary of the Muskingum County Academy of Medicine has forwarded eighteen subscriptions to *Hygeia* as representing a special subscription by that society.

Chiropractors Fined—Peter Boike, Madisonville and Adolph Stoerker, Norwood, chiropractors were fined \$50 and \$25 respectively, by Judge Dumont in St. Barnard, March 7. It is reported for practicing medicine without a license. Both men decided to serve a prison sentence in preference to paying the fine.

Workmen's Compensation Law—The Supreme Court recently decided that the term "injury" in the Ohio Workmen's Compensation Law does not include diseases contracted in the course of employment and accordingly holds that death from typhoid fever is not compensable. In the case of *Industrial Commission v. Cross* the judgment of the Ohio Court of Appeals was reversed.

Columbus Academy of Medicine—At a dinner given by the academy at the Chittenden Hotel February 26 Dr. Paul Roth of Battle Creek Sanatorium, Battle Creek, Mich. gave an address on "The Respiratory Exchange in Relation to Clinical Diagnosis." Dr. Charles E. Roderick, also of the Battle Creek Sanatorium presented interesting data on the possibility of spreading respiratory infection by means of the apparatus for the determination of basal metabolism.

OKLAHOMA

Hospital News—The deal tentatively made with members of the Bryan County Medical Society regarding the Durant Memorial Hospital (THE JOURNAL March 10 p. 704) was not consummated. The institution has been purchased by two local physicians and is now open to all medical practitioners who wish to take advantage of its facilities.

Medical Board Bill Goes to Third Reading—The senate bill creating a state board of medical examiners, with an amendment excepting Christian scientists from certain of its provisions, was passed to engrossment and the third reading by the upper house February 28. This act creates a board of seven members, appointed by the governor, who shall be graduates from recognized medical colleges and who have been legal and active practitioners of medicine in Oklahoma for at least five years prior to their appointment.

Health Commissioner Asks Physicians' Support—Dr. E. A. Davenport recently elected state health commissioner, has sent letters to all the physicians of the state asking that medical forces rally to support the department of health in securing appropriations totaling \$208,670 for each of the next two years. Three large departments have been added to those under control of the board, the bureau of control of epidemics, for which \$15,000 is asked, a venereal disease department, for which \$20,000 is asked for upkeep and a bureau of maternity and infant welfare, to support which \$21,370 is asked.

PENNSYLVANIA

Graduate Course for General Practitioners—A graduate course of three weeks' duration will be given at the University of Pittsburgh School of Medicine beginning May 31. This course will be devoted to the interests of the general practitioner. Instruction will be by lecture, clinic and demonstration at the school of medicine and the large hospitals of the city.

Philadelphia

Dr. Deaver Made Professor Emeritus—Dr. John B. Deaver, who having reached the age limit retired as John Rhys Barton professor of surgery at the University of Pennsylvania Medical School, Philadelphia, June 1922, has been named emeritus professor of surgery in the university.

UTAH

National Association to Be Entertained—Dr. F. A. Goelty, president of the Salt Lake County Medical Society, has appointed a committee to carry out plans for the entertainment of the physicians who will be in Salt Lake City in June en route to and return from the annual meeting of the American Medical Association. The local medical society will have a to meet every delegation and to its wishes with regard

WASHINGTON

Tacoma Subscriptions to "Hygeia"—Pierce County Medical Society with headquarters at Tacoma has sent in 199 subscriptions to *Hygeia*, the new journal of individual and community health, published by the American Medical Association

CANADA

Social Hygiene Campaign—A social hygiene campaign was inaugurated in January by the Canadian Social Hygiene Council, under the auspices of the department of health of the province of New Brunswick. Dr John J Heagerty of the federal health department, Dr Gordon A Bates of the Canadian Social Hygiene Council, and Dr John A McCarthy of the health department traveled almost continuously for two weeks conducting public lectures in every part of the province

Personal—Dr Norman H Sutton, Peterborough, has been appointed district health officer of District No 4 under the Ontario Provincial Board of Health, to succeed Dr George Clinton—R B McCauley, Sault Ste Marie, has been appointed sanitary inspector of the board of health of the Province of Ontario, to succeed the late James Taylor—It is announced that legislation is now under way in Ontario to reward Dr Frederick Banting of Toronto for his discovery of insulin—Dr A E Webb-Johnson, D S O, of London, England, recently addressed an assemblage of physicians and medical students at the Toronto Academy of Medicine

GENERAL

Committee on Narcotics Completes Report—Dr Rupert Blue, U S Public Health Service, who has been representative of the United States at Geneva during the deliberations of the League of Nations committee on narcotics, advised the State Department this week that the committee had completed its task, and copies of the report agreed on by the various national representatives were being forwarded to Washington. Dr Blue was assigned to the committee at the request of the league

First Aid Manual for Postal Employees—Just before his transfer from his position as head of the Postoffice Department to the position of Secretary of the Interior, Dr Hubert Work issued a manual, entitled "First Aid for Postal Employees." The book was prepared through cooperation with the U S Public Health Service, under the supervision of P A Surg R C Williams. The manual has twenty-four pages. It is pocket size, and is one of the safest booklets of its kind thus far prepared for the public. The advice is invariably simple, cautious and limited to such measures as the ordinary person of average intelligence might very well understand. In addition, every postoffice throughout the United States has been furnished with a first-aid emergency chest, 115 large outfits going to the larger postoffices and 2000 smaller outfits to the smaller offices and railway terminals

Psychiatric Social Work—Announcement is made of the organization of a section on psychiatric social work as a special section of the American Association of Hospital Social Workers. Graduates of recognized courses in psychiatric social work are eligible for membership after being employed for one year in social work in a hospital or dispensary. Without such special training, two years' service in psychiatric social work is required. The entrance requirement for the special courses at Smith College and the New York School of Social Work is education of college rank. The special course covers about two years and includes practical training in the field for at least nine months. It is hoped that these standards will be maintained. A curriculum was recommended by a committee, which worked during the year 1921-1922. The objects of the section are (1) to promote association of psychiatric social workers, and (2) to promote standards of psychiatric social work. The next meeting will be held in conjunction with the Conference on Social Work in Washington, D C, May 16-23. The officers of the section are Mary C Jarrett Boston president, Mary Ferguson Philadelphia vice president, Maida H Solomon Boston secretary-treasurer. Inquiries should be addressed to Mrs H C Solomon 74 Fenwood Road, Boston

The American Child Health Association—The important personnel of the American Relief Administration have joined in a consolidation of the American Child Hygiene Association and the Child Health Organization of America, in the formulation of a new voluntary agency for the advancement

of child life, called the American Child Health Association. The American Relief Administration has volunteered to guide the executive effort of the new organization in its endeavor to provide funds to carry on its work. The officers of the new organization are Herbert Hoover, president, L Emmet Holt, first vice president, Livingston Farrand, second vice president, Thomas D Wood, third vice president, and Philip Van Ingen, secretary. The headquarters are at 532 Seventeenth Street N W, Washington, D C, and the administrative office at 370 Seventh Avenue, New York. The object of the organization is to use the great experience of the American Relief Administration in saving children to the advantage of American children, and to translate into facts the "Bill of Rights," stated by Mr Hoover, its president. There should be no child in America who is not born under proper conditions, does not live in hygienic surroundings, ever suffers from malnutrition, does not have prompt and efficient medical inspection and attention, and does not receive primary instruction in the elements of hygiene and health

Bequests and Donations—The following bequests and donations have recently been announced

University of Cincinnati College of Medicine and the Hospital of the Protestant Episcopal Church for Children, Cincinnati, each \$250 000, under the will of Mrs H H Taylor

The residuary estate of Margaret Jaeger valued at approximately \$100 000, to be divided among the following institutions: St Vincent's Hospital, New York; Lenox Hill Hospital; St Joseph's Home for the Aged; St Joseph's Hospital for Consumptives; Lebanon Hospital; Wyckoff Heights Hospital; Brooklyn Isabella Home; New York Foundling Hospital; Association for Improving the Condition of the Poor; and the Society for the Relief of Ruptured and Crippled

Epileptic Hospital Oakbourne Pa and the Rush Hospital for Consumption Philadelphia each \$10 000; Presbyterian Hospital Philadelphia, \$10 000 for free beds in memory of Jacob Y Dietz and Eugene Santee; Children's Seashore Home Atlantic City N J; the American Oncologic Hospital and the Lankenau Hospital Philadelphia, each \$5,000, under the will of Miss Mary E Santee

For a new hospital at Wakefield Mass \$50 000 by an anonymous donor

Servants for the Relief of Incurable Cancer, New York, \$57 947, by the will of Mrs Charles T Klein

Touro Infirmary New Orleans \$25 000 by Harmony Club members; St Vincent's Hospital Toledo Ohio \$20 000 by the Rev J Berthelot of Tiffin

St Agnes Hospital Fond du Lac Wis, \$10,000, by Dr George W Earle of Harmanville Mich

Sunset Home and Hospital, Concordia, Kan, a 160 acre farm valued at \$20 000 by Olof Anderson

St Francis Hospital Santa Barbara, Calif \$1 000, the result of a children's fete

Burlington (N J) Hospital \$500, by the will of Mary A L Bishop

Campaign to Improve Health of Indians—A special campaign to eradicate trachoma and reduce tuberculosis among American Indians has been inaugurated by the Office of Indian Affairs of the Department of the Interior. Special instructions were sent out to all superintendents that physicians at the agencies and schools begin at once study of the symptoms and diagnosis of these diseases and immediately give treatment in every available case. In cases of trachoma, medical personnel are instructed to conduct systematic examinations of eyelids of Indians so that there will be no delay in giving treatment to those affected. Physicians on duty among the Indians are also urged to equip themselves professionally to do the expression operation for trachoma. The crusade against tuberculosis is to be vigorously pushed by health officials in the Indian Service. Special efforts are to be devoted to an early diagnosis of this disease, after which a carefully outlined routine of living and treatment is to be enforced. The instructions sent to superintendents stated that the past high tuberculosis death rate among Indians because of racial predisposition would no longer be considered a satisfactory explanation for increased morbidity from this source. A survey of the existence of simple and toxic goiter among the Indians of the United States has been started by the Department of the Interior. The census will be completed by the end of the month. Its purpose is to obtain data of historic and medical value, and Indian schools and agencies have been instructed to give early records regarding individual cases of goiter found among the various tribes

The Standardization of Biologic Stains—It is not generally realized that dyes used for biologic stains, in order to give constant results, must be of precise chemical composition, and that it is difficult for the chemist or biologist to control their composition. Before the war, all stains were imported from a single German firm, which did not manufacture stains, but bought textile dyes, and after preliminary testing bottled them and sold them under its own name to laboratories. The war deprived American laboratories of this source of stains, and after prewar stocks had given out, it was difficult to get stains of good quality. A cooperative investigation of American made dyes was arranged through the National Research

Council, among the members of several national societies. That work has been organized now under a special commission independent of the research council, but still representing the different national societies that were cooperating in the earlier work. At the meeting of the executive committee of this commission in New York March 2, it was shown that stains available in America now are in practically all cases as good and sometimes better than the best of the prewar stains. The most important fact brought out at this meeting was that prewar stains were standardized only in an empiric way by the purchase of large quantities without knowledge of the exact composition of the dye, but they are now standardized on the basis of pure chemicals. In some cases, the impurities present in prewar stains were necessary. These impurities were other dyes and sometimes supposedly inert materials, such as dextrin. The task before the commission was to find what the impurity was that was responsible for the good staining qualities of the impure product and then to demand that these impurities be present as intentionally added ingredients. When this has been done, and the products are labeled, American stains will in truth become standardized. The commission will soon issue certifications of batches of stain that it has found satisfactory. These stains will be put on the market under a special label, bearing the name of the commission.

Peace Time Health Program of American Red Cross—A health advisory committee of the American Red Cross consisting of Drs William H. Welch, Baltimore, Herman M. Biggs, New York, Thomas S. Cullen, Baltimore, Hugh S. Cumming, Washington, D. C., Livingston Farrand, Ithaca, N. Y., Franklin H. Martin, Chicago, Fred B. Lund, Boston, George M. Piersol, Philadelphia, John H. J. Upham, Columbus, Ohio and C. E. A. Winslow, New Haven, Conn., was appointed in October, 1922. Its report was recently submitted to and approved by the Red Cross. The following policies concerning a peace time health program were endorsed by the committee:

- 1 The organization of classes in home hygiene and the care of the sick.
- 2 The organization of classes in nutrition.
- 3 The organization of classes in first aid and life saving.
- 4 The health phases of the Junior Red Cross program, such as (a) the development of personal health habits, (b) participation in a school health program and (c) participation in community health programs.
- 5 The enrolment of properly qualified nurses under the division of nursing service.
- 6 The organized development of public health nursing in rural and semi-rural districts through the activity of the division of public health nursing.
- 7 Assistance in the development and standardization of the training of public health nurses through loans, scholarships, subsidies and the like.
- 8 The development of machinery for the coordination at one central point of the work of various local health agencies.
- 9 Cooperation on a national scale with such organizations as the National Health Council for the purpose of furthering the coordination of voluntary public health activities.

The committee recommended that the home hygiene and nutrition work be extended by the organization of a health study group—for the consideration, first, of the principles of personal hygiene, and second, of local community health conditions and health needs, that it should be regarded as an essential principle by the Red Cross that all health work undertaken should be carried on only with the knowledge and approval of the state department of health and of the locally constituted health authorities of county, city or town, that in view of the intimate contact between a public health program of any type and the work of the medical profession chapters should ask the local medical society or the local physicians as a group to nominate a physician of their own choice to act as their representative on the chapter executive committee or the committee on nursing activities. Judge John Barton Payne, chairman of the American Red Cross, announced that a director of health service will be chosen as soon as a suitable person can be found, and the recommendations of the committee put into effect.

LATIN AMERICA

Public Health Society in Brazil—A Brazilian public health association was recently organized. Dr Carlos Chagas is president and Dr J. P. Fontenelle secretary.

Brazilian Society Elects Officers—The following officers were elected by the Medical and Surgical Society of Rio Janeiro: president, Prof. Fernando Magalhães, vice president, Prof. Miguel Osorio de Almeida, secretary, Gen. Dr. Arnaldo de Moraes, speaker, Dr. Carlos Sa, treasurer, Dr. Custodio Fernandez, librarian, Dr. F. Catao, editor, Dr. Felicio Torres and director of museum, Dr. Mario Goe.

Personal—Dr. Jose Arce, professor of surgery at Buenos Aires, has been elected an honorary member of the Academia

de medicina at Rome. At the same meeting, Drs. L. Lenzi and S. Marino of the Italian hospital at Buenos Aires were elected corresponding members.—Dr. S. Mazza, professor of bacteriology at Buenos Aires, has left for Europe intending to study tropical diseases with Nicolle at Tunis and malaria in France and Italy. He is one of the editors of the *Prensa Medica Argentina*.

Memorial to Carrion—At the recent Latin American Medical Congress at Havana, a tribute was paid to Daniel A. Carrion of Lima, the young martyr to science in 1885 during research on Peruvian verruca and Oroya fever. The *Vida Nueva* endorses the suggestion made at the congress that each of the American republics should send a block of granite to Peru for a monument to Carrion each block to be appropriately marked and the whole to form a memorial shaft. Our exchange urges that prompt action be taken so that this commemoration will be an accomplished fact when the next Latin American congress meets in Mexico.

Nicaragua Wants a National Pharmacopeia—The *Gaceta Medica de Nicaragua* contains a letter from Dr. Andres Morin which presents data demonstrating the inconveniences and dangers of the present condition in Nicaragua without any standard pharmacopeia. The same drug purchased at different times in the same pharmacy may differ materially according as the manufacturing firms follow the French or United States or other pharmacopeia. The French Codex is the one that has been most in use but the United States measurement by measure instead of weight is more convenient. The recent Latin American Medical Congress at Havana discussed the necessity for a Latin American pharmacopeia.

FOREIGN

New Spanish Journal—Under the title *Clinica y Laboratorio* a new monthly journal has begun publication at Saragossa, Spain. The editor is Dr. R. Horno Alcorta. The new journal is octavo size and contains an average of 100 pages and six original articles, with illustrations. The subscription price is 40 pesetas a year.

Medical Fees Increase in Portugal—The Portuguese Medical Association on account of the continuous increase in the cost of necessities, has decided to raise its fee scale. In view of the fluctuations of Portuguese money, fees will be based on the 1914 prices of necessities plus the proportional increase in these since that time.

Gift for Research Work—Sir Alfred Yarrow of London has donated nearly \$500,000 to the Royal Society for research work. The fund may be administered at the society's discretion, but Sir Alfred said: "I should prefer that the money be used to aid scientific workers by adequate payment and by the supply of apparatus or other facilities rather than to erect costly buildings."

Italian Fund for Medal in Chemistry—A committee has been appointed by the Italian Association of General and Applied Chemistry to arrange a celebration in honor of the seventy-fifth anniversary of Professor and Senator L. Paterno. The Paterno medal will be conferred annually to the author of the most important contribution to chemistry regardless of nationality. Contributions to a fund for this purpose are welcome from the chemists of the world.

Institute for Medical Research of the Federated Malay States—The *British Medical Journal* announces receipt of the annual report of the institute, compiled by Dr. William Feltcher, acting director of the government laboratories in which it is stated that a special inquiry was made in cases of malaria described as quinin resistant. Of forty such cases investigated in only one was the condition influenced by quinin. In one other case described as "tively resistant" parasites persisted for a long time after treatment.

Protection Against Injury from Roentgen Rays—A conference was recently held at Berlin to discuss measures for better protection of roentgenologists in making the apparatus of the X-ray machine. The conference sided and a number of suggestions and resolutions were adopted in the discussion. It was recommended that no necessity for legislative action in the future is planned. The University Clinics and roentgenologists to be

Pockefeller Medical Institute, New York, France.—The *Presse Medicale* has

ment bienfaisante propaganda against tuberculosis in France, and has handed over its services and its activities to the Comite national de defense contre la tuberculose The seat of this is 66 rue Notre-Dame-des-Champs, Paris It is in charge of M Leon Bourgeois and of Professors Calmette and L Bernard, and the work is to be carried on in the same way by lectures, motion pictures and other means

New Medical Museum Journal—The *Journal of Technical Methods* has recently been issued by the International Association of Medical Museums, replacing the series of bulletins, of which seven had been published The first number is a memorial to Sir William Osler It also contains articles on histologic technic used in pathology, and on preserving fluids for gross pathologic specimens, and a discussion on photomicrography A function of the association is the establishment of an international system of exchange of museum specimens and pathologic material for microscopic research

Fellowships for Research on Malaria—The *Annali d'igiene* gives the details for competition for the two fellowships, of 12,000 liras each, offered by the Italian government for research on malaria Among the themes suggested for special study are the development of malaria in regions with few mosquitoes, the biology of mosquitoes, their range of flight, the incidence of malaria before the mosquito season, relations between malaria and domestic animals, the water plants which promote or check proliferation of mosquitoes other larvacidal measures, and means to enhance immunity and protect workers in the fields

Good Advice for Physicians and Patients—Under this heading, the *Nederlandsch Tijdschrift* reproduces two articles from THE JOURNAL of Jan 6, 1923 One was entitled "Some Sound Financial Advice for Physicians and Medical Advice for Laymen," page 53 The other was "The Problems of Personal Medical Advertising," page 56 Our Netherlands exchange comments appreciatively on both, remarking in conclusion, "It will be a difficult task for the American Medical Association to root out such inveterate and insidious evils as the trend to vulgar commercialism The fine results of its fight against nostrums encourages the hope that it will succeed"

Deaths in Other Countries

Dr Henrique Souza Lopes, formerly professor of toxicology and materia medica at Rio de Janeiro, and author of numerous works on these specialties—Dr L Langieri of Buenos Aires—Dr H Monnier of Montreux, aged 75—Dr A Dumur of Evian, aged 70—Dr H Bickel, privatdozent for neurology at Halle—Dr Julián Fuentes and Dr Joaquín González Hidalgo, both of Madrid—Dr Georges Perrochaud, intern at Paris, succumbed to fulminating scarlet fever contracted in his hospital service—Dr J Vitrac of Pau, professor emeritus of surgery at the Bordeaux medical school—Dr W P Purvis, senior surgeon to the Southampton Hospital, England—Dr Patrick Muldoon was shot and killed by rebels at Mohill, Ireland March 18

Government Services

Hospital Trains Authorized

Pursuant to the instruction of the Secretary of War, the organization of the following hospital trains, organized reserves have been authorized Hospital Tram No 46 (Illinois), No 63 (Arkansas), No 10 (Illinois), No 9 (Virginia), No 68 (Indiana), No 54 (Kentucky), No 7 (Pennsylvania), No 48 (Oklahoma), No 66 (Arkansas), No 40 (New Jersey), No 17 (New York), and No 8 (New York)

Hospitals Authorized

Pursuant to instructions of the Secretary of War, the organization of General Hospital No 1 (Organized Reserves (Bellevue Hospital Unit New York City), of Evacuation Hospital No 2 (St. Luke's Hospital Unit, New York City) and of Evacuation Hospital No 25 (West Suburban Hospital Unit Melrose Park Ill), has been authorized Organization of the following hospitals, organized reserves at the Western Reserve University School of Medicine, Cleveland, has been authorized General Hospital No 4 (Lakeside Hospital

Unit), General Hospital No 57 (City Hospital Unit), and Surgical Hospital No 5 (St Vincent's Charity Hospital Unit) The organization of a veterinary convalescent hospital, organized reserves, to be known as Veterinary Convalescent Hospital No 1 (a second corps area unit), has also been authorized

Instruction in Treatment of Pulmonary Tuberculosis

Physicians in the U S Veterans' Bureau service who have completed the preliminary course in treatment of tuberculosis are eligible to attend the graduate course now being given, and to be repeated at intervals, at Veterans' Hospital No 41 New Haven, Conn, and at Fitzsimons General Hospital, Denver, Colo These schools opened March 1 and 5, respectively The chief instructor of the New Haven school is Dr Nathan Barlow of the U S Public Health Service The Denver school is in charge of Major E H Bruns, M C, U S Army, chief of the medical service The instructors in the New Haven course include not only tuberculosis specialists connected with the U S Public Health Service and the U S Veterans' Bureau, but the following specialists not in the bureau service Drs Yandell Henderson, F G Blake, J S Ely, H B Ferris, H W Haggard, E K Hunt, A M R Lauder, C A E Winslow and M C Winternitz, dean, from Yale University Medical School, Col G E Bushnell, Bedford, Mass, Drs Roy Adams, Washington, D C, H K Dunham, Cincinnati, George Fetterolf and Thomas McCrae, Philadelphia, A K Krause, Johns Hopkins Hospital, Baltimore, D R Lyman, New Haven, Conn, Edgar Mayer, Saranac Lake, N Y, W S Miller, Madison, Wis, E L Opie, Washington University, St Louis, J H Pratt, Boston, and Asst Surg-Gen F C Smith, U S Public Health Service, Washington, D C

Assistant instructors in the New Haven school from the bureau service are Acting Asst Surg L G Beardsley, Surg E P Bledsoe and P A Surg Karl Schaffee

Those not in the bureau service who will assist in the instruction at Denver are Drs A M Forster, C F Gardner and Gerald Webb, of Colorado Springs, Colo, and Drs W H Bergtold, C E Edson, Leonard Freeman, J N Hall, C B Ingraham, Robert Levy, A J Markley and H F Pershing, of Denver

These courses are thorough and will last at least two months in each school The general supervision of both the preliminary and the graduate courses is in charge of the clinical director of tuberculosis in the central office of the bureau, Washington, D C

Successful Candidates for Navy Medical Corps

The following physicians have recently been examined and found physically and professionally qualified for appointment in the grade of assistant surgeon, rank of lieutenant (jg), in the medical corps of the Navy J E Root, Jr, Temple, Texas, R E Avery, Barre, Vt, J F Hays and J M Brewster Philadelphia, E S McRoberts, Indianapolis, and J J Markey and J D Viacelli, Denver

Internships in Army Hospitals

The medical department of the Army will accept for internship in its large general hospitals graduates of class 'A' medical schools of this year's graduating class who have the endorsement of the faculty of their school for commission in the medical corps of the Regular Army, and who are physically qualified for service There is no mental examination for these appointments Interns who satisfactorily complete one year's internship under these conditions will be commissioned, if they so elect without further examination, other than physical, in the medical corps of the Regular Army The pay of an intern is \$60 a month with rations, quarters, necessary traveling expenses and medical attendance

United States General Hospitals at which these interns will be placed, include

	Beds
Walter Reed General Hospital Washington, D C	1 000
Fitzsimons General Hospital Denver	1 500
Beaumont General Hospital El Paso Texas	300
Letterman General Hospital San Francisco	500
State Hospital Sam Houston San Antonio Texas	400

the same responsibilities. It also adds that inequality of payment will tend to prevent the better qualified and more experienced women from offering themselves for appointment.

Chair of Animal Pathology at Cambridge

The senate of the University of Cambridge has accepted the offer of the ministry of agriculture of \$150,000 to found a professorship of animal pathology. This is the first step toward the creation of an institute for research in the pathology of animal diseases. The first duty of the professor will be to prepare plans, and it is understood that the government departments concerned are prepared to consider schemes involving a total expenditure, on buildings, staff and upkeep of \$500,000 in the next four years. After that the financing of the institute will depend on circumstances. Headquarters will be in an extension of the school of agriculture, where the new professor will have the assistance of Prof. T. B. Wood and Prof. R. H. Biffen, among others, who will aid him in directing the work along agricultural lines. His windows will look into the new biochemical laboratory that is being built for Prof. F. G. Hopkins. A few yards away is the Molteno Institute, where Prof. F. G. Nuttall pursues his studies in parasitology. The university medical school also is adjacent. The necessary paddocks, stables and animal houses will be provided at the field laboratories just outside the town. Thus, there is every facility for coordinating the new institute with all the allied departments of the university.

PARIS

(From Our Regular Correspondent)

Feb. 23, 1923

Can Sports Regenerate the Human Race?

It has been frequently assumed that participation in sport, if it became more general, would preserve the human race from physical degeneration, but in recent examinations of draftees, those who were in the habit of engaging in sport activities were not found to be better built or more robust than the others. On the contrary, a large proportion of the devotees of sport were assigned to the deferred class, on account of poor physical development or disturbed heart action. It would seem, therefore, that we have greatly deceived ourselves, when, reacting against the gymnastics of the school and the army, we have maintained that sport and athletics would provide adequate physical training for children and adolescents. Dr. Ruffier, who has for many years studied the problems of physical education, analyzes the causes of this deception. What gives, he says, a special character to the exercise obtained in sport activities is the spirit of competition—the struggle between competitors who are endeavoring to defeat each other. This is, moreover, the view that young people take of sport. Their youthful enthusiasm, their pride, their desire to measure their strength against their fellows, lead them to take part in foot races, bicycle races, boxing matches and football, in which they find an opportunity of asserting their physical superiority. That is exactly why sport is bad for them and why its effect is absolutely nil as far as the regeneration of the race is concerned. Sport may be regarded only as a pleasing means by which those who are strong of muscle can exhibit their great physical qualities. On the other hand, sport can only be the cause of exhaustion, or at least an arrest of development for children and weak adolescents. In order that a future champion in the Olympic contests may be discovered in a crowd of young men, just think how many must be overtrained. Another disadvantage is that many, too easily convinced of their physical inferiority, abandon exercise in all its forms. The main thing, then, is not to train weak-

lings so that they may become distinguished for their prowess in sport, but to base physical education in the schools and colleges on gymnastics tending toward an all round physical development.

The Abuse of Morphin in Chronic Affections

Dr. Maurice Renaud recently called the attention of the Societe medicale des hopitaux of Paris to the misuse of morphin injections in chronic diseases. Renaud is physician to the old people's home at Brevannes, where also a number of hospital patients affected with incurable chronic diseases are admitted. When Renaud took up his work in this service, he found thirty patients, to whom 250 injections of morphin were being given every day. These patients were suffering from tabes, paraplegia, diseases of the stomach, rheumatism and cancer, and their condition was extremely pitiful. Renaud soon became convinced that this abuse of morphin was to a greater extent responsible for their sad condition than was the affection on account of which they had become morphin addicts.

As he studied these morphin addicts, it became apparent that the use of morphin did not make it easier for them to bear the discomforts of chronic diseases, nor did it alleviate any of their symptoms, for, as is well known, morphin is a sovereign remedy only in acute and paroxysmal pain, and, on the other hand, suppresses the marvelous capacity of the human organism to become resigned to most abominable situations. The use of morphin in these cases, therefore, defeats its own end. Instead of producing mental repose, it creates a state of constant irritability, for the patient comes to await, in a state of constant anxiety, the next injection.

On discontinuing entirely the use of morphin, Renaud noted an improvement in all patients. Some of them who were not affected with any serious disease and whose condition had not become grave by reason of their morphinomania became normal as soon as the intoxication was suppressed.

Renaud concludes from these facts that the injection of morphin should be an exceptional form of medication, since the benefits are only transient, and deplorable symptoms result if it is prolonged more than a few days. It should be reserved for the relief of pain in crises or for the alleviation of agony.

Honor Loans for Students

Utilizing a gift of 100,000 francs from Mme. Nathan, a trial of the honor loan system, on a rather extensive basis, has been inaugurated by the University of Paris. In accordance with the expressed will of the donor, twenty loans of 5,000 francs each are to be allotted. During the month of January, applications from students were received and inquired into. The committee of the Societe des amis of the University of Paris, which has been designated by the rector of the university as the body to decide on applications, has proceeded with the allocation of the loans, and has established the rule that they must be repaid within fifteen years.

An Ovation to Dr. Vaillant

The municipality of Paris recently tendered, at a special session of the municipal council, an ovation to the roentgenologist Charles Vaillant, who, after numerous partial operations on his fingers, hand and shoulder, has paid with the loss of both arms for his untiring devotion. Many distinguished persons were present at this meeting, including Hon. Myron T. Herrick, American ambassador, M. Strauss, minister of public health, Professor Roger, dean of the Faculte de medecine, and members of the Carnegie Foundation. Dr. Vaillant was requested to sign in the *Livre d'or* the official report of his reception. This was a pathetic scene for, in order to accomplish this act, our crippled confrere had to use an apparatus fitted to the right arm.

the onset of the first symptom. The pathologic specimen was therefore obtained at a very early stage of the process. The patient had become deaf in one ear many years before, and suddenly, while eating, he became deaf in the other ear. He rushed to see Neumann, who found that he was totally deaf. The examination was hardly over when the patient killed himself. At necropsy, the diagnosis of serofibrinous labyrinthitis was confirmed. The nature of the exudate explains the diverse responses to different tests.

Otosclerosis remains as much a problem as when first studied by Politzer. Neumann showed specimens from cases of progressive deafness, and pointed out that the majority of cases diagnosed as otosclerosis are not such. A specimen which attracted much attention was a neurofibroma from the internal auditory meatus. In neurofibromatosis of the vestibular portion of the nerve, dizziness is the first symptom, total deafness appearing later. The prognosis in growths of the acoustic nerve is serious, as the roentgen rays cannot detect them during the operable stage.

Other specimens exhibited were congenital malformations, which are very rare in the internal ear. One was a case of Mondini's deformity in a patient who was able to hear a little. One specimen demonstrated the possibility of developing intra-uterine suppurative labyrinthitis, and its spontaneous healing, also in utero. The case occurred in a maternity home, and the child died at birth.

Neumann recalled that a few years ago all otologists were interested in nystagmus, today the principal topic is tinnitus aurium, about which little is known. Otologists should try to throw light on this troublesome complaint. Specimens exhibited led to a discussion of neuronophagia. In one section, the auditory cells exhibited protoplasmic changes, in another, there was hyperplasia of the interstitial tissue between the ganglion cells, a third specimen showed only interstitial tissue, the ganglionic tissue having disappeared. These specimens explain some of the possibilities in tinnitus aurium: buzzing in the ears without deafness, deafness without buzzing, and buzzing preceding or following deafness.

The Society of Otologists appointed Professor Neumann an honorary member. A few days before, the Royal Academy of Medicine had appointed him a corresponding member of the academy.

Anoxemia from Intoxication

Dr Carracido, professor of biologic chemistry in the school of pharmacy, and president of the Central University, gave a lecture on anoxemia. It is well known that no form of life can exist without oxygen, even anaerobes absorb it in certain combinations. The quantity of oxygen necessary varies for each species. The higher the animal in the zoologic scale, the more oxygen is required, and special organs have been developed to accumulate it. The human organism has about 5 liters of oxygen in solution in its plasma, but more is needed, hence the presence of red cells, whose function is to store oxygen.

According to one theory, carbon monoxide forms a more stable combination with hemoglobin than does oxygen. Carbon monoxide poisoning is then explained by the replacement of oxygen by carbon monoxide, with consequent anoxemia. Carracido does not accept this explanation, as in such cases the proportion of carbon monoxide which replaces oxygen is very small. Oxyhemoglobin still forms more than 90 per cent. of the total. Dr Carracido attributes the poisoning to catalysis of oxygenated compounds of the blood.

The most characteristic feature of biologic combinations and reactions is their extreme delicacy. Thus, sugar burns completely in the body at body temperature, while outside the organism temperatures incompatible with life are required for the same purpose. This vital combustion is brought about

through the presence of catalyzers. These bodies are extraordinarily sensitive. There are substances which, even in infinitesimal amounts, paralyze the catalyzers, and this explains why carbon monoxide and sulphureted hydrogen interfere with the catalysis. Carracido, therefore, explains anoxemia, as the result, not of the substitution of carboxyhemoglobin for oxyhemoglobin, but of the insufficiency of the plasmatic oxygen for maintenance of cell life. Carboxyhemoglobin, sulphohemoglobin, and similar substances prevent the catalyzers from furnishing the necessary surplus from the combined oxygen.

Dr Carracido also called attention to other anoxic phenomena. Oxyhemoglobin decomposes at a certain temperature, while methemoglobin, an isomeric combination, is inert. Methemoglobin may be produced outside the body by such substances as potassium ferrocyanide. The same transformation may be brought about in the body by the action of many hypnotics and analgesics. Many a person has died from taking sedatives advertised in the newspapers. While death is attributed to nervous accidents, the nervous system is not at fault, it is only the first system to suffer from lack of oxygen.

Transformation into methemoglobin becomes slower with increasing alkalinity, hence, the greater change in cases of acidosis. No methemoglobin is produced when potassium ferrocyanide is injected into an animal because this salt does not dissolve in the cell constituents. But some drugs, such as phenacetin, which do not produce methemoglobin in vitro, may do so in vivo, hence, the danger of using such drugs. Certain toxins, such as that of diphtheria, also cause methemoglobinization. Methemoglobin is dead oxyhemoglobin. It may be brought back to life by being reduced to hemoglobin, which will then become oxyhemoglobin. This transformation is brought about by reducing substances that abound in the body.

BERLIN

(From Our Regular Correspondent)

Feb 15, 1923

Death of Professor Roentgen

Professor Roentgen, the famous discoverer of roentgen rays, died in Munich, March 10, at the age of 77. The importance of his discovery for science in general, and in medicine in particular, needs no elucidation. In America especially, important progress in this field, as regards both theory and practice, has been made. In December, 1895, the first roentgenogram exemplifying the significance of the roentgen ray in the field of medicine was demonstrated in connection with internal medicine by the late neurologist Jastrowitz of Berlin.

Cocainism

At the last session of the Berliner medizinische Gesellschaft, the abuse of cocaine, especially the method of snuffing it up the nose, was discussed by several speakers, and means were considered as to how this dangerous practice can best be combated. In Germany, the snuffing of cocaine did not become widespread until after the war. The commonly assigned causes for this are a desire to gain relief from the sufferings of the war by the use of narcotics, and secondly, an endeavor to find a substitute for alcohol. Cocaine 'snuff' may be procured at bars, in low dives, and even on the street—a pinch costing at the present time from 400 to 600 marks. The habit of using cocaine snuff seems to spread more rapidly than the injection method, which is usually carried out in one's private apartments. The toxic effect of cocaine when snuffed is less than when injected. The dosage producing euphoria is further removed from the toxic dosage than is the case in injections of cocaine. Nor are degenerative effects observed so soon. For the most part, irrespon-

sible, psychopathic persons take up with this vicious habit, especially prostitutes, who are usually at the same time alcohol addicts. Cocain addicts have their special resorts throughout the city, where restaurant keepers, waiters and women (especially those in charge of public comfort stations) sell the cocain powder. They also have a type of low doggerel verse. With his watch and pocket mirror in his hand, the "snuffer" eagerly awaits the onset of the euphoria and the pleasurable day dreams. When the effect begins to abate, he takes another pinch. Cocain snuffers can often go several days without feeling the need of sleep. Finally, a hallucinatory stage follows, which is attended by excitability, fear states, and delusions of persecution, which give rise to malicious resistance. The snuffing of cocain causes a characteristic distortion of the nose, while the formation of small ulcers within bring about the perforation of the nasal septum, which, however, as Professor von Eicken pointed out in his discussion, may be observed in other intoxications, especially among workers in chromium. The prognosis for cocain addicts is more favorable than for morphin addicts, since a complete metamorphosis of the organism does not occur nor are there marked withdrawal symptoms when the amount taken is gradually reduced. If the habit is not broken up, bodily and mental degeneration and premature death are the result. In order to effect a permanent cure, it is very desirable that a patient be separated from his old environment, for otherwise he is liable to relapse. Cocain is often procured by patients deceiving their physician. Often cocain is dispensed by pharmacists for the reason that the prescription of the physician did not state that it should not be refilled. Pharmacists are also frequently deceived by counterfeited prescriptions. The method of controlling the sale of opium as established by international agreement does not apply to pharmacists. Dr. Joel thinks that the situation would be much improved if pharmacists would dispense cocain only to physicians well known to them. Since physicians themselves are restricting their use of cocain more and more and are employing substitutes instead, regulation of the amount manufactured or imported might be established. Professor Hahn, the hygienist, of Berlin, who estimates the number of cocain snuffers in Berlin as from 5,000 to 6,000 (in the other large cities of Germany the habit is, as yet, not so widespread), demands the cooperation of physicians and legislative enactments to curb this evil, which, owing to the form of proselytism adopted, spreads like an infectious disease. He holds that the government should adopt such a definite policy as will prevent the less harmful stimulants, such as tea, coffee and beer, from becoming so high in price that cocain comes to be substituted for them. Professor Anselmino and Professor Rost, both connected with the central public health office, discussed the measures that the administration had applied thus far with a view to checking the spread of this evil.

Marriages

EDWARD WHEELER WILDER, Boston to Miss Harriet M Wyman of Lincoln, Neb., at Madura, India, January 15.

MALCOLM MOONEY NEEL, Geiger, Ala., to Miss Martha Mae Dillard of Atlanta, Ga., February 22.

WILLIAM ARTIS DAWSON to Miss Harriette Marie Reder, both of Chicago, December 31.

FRANKLIN W SELLS, Osceola, Iowa, to Miss Clara Beck of Los Angeles, February 1.

JOHN M OGLESBY, Alexandria, La., to Miss Angela Leake of New Orleans, recently.

OLGA McNEILE to Mr. Frederick W Robinson, both of Los Angeles, February 2.

Deaths

Walker Gill Wylie of New York, Bellevue Hospital Medical College, New York, 1871, died, March 13, of pneumonia, contributory cause arteriosclerosis. Dr. Wylie was born in Chester, S. C., in 1848. Following graduation from the University of South Carolina, he served throughout the Civil War. After graduating from Bellevue Hospital he went abroad to study the Nightingale system, and returning established the first training school for nurses at Bellevue. Dr. Wylie served at Bellevue for twenty-five years as gynecologist. He was appointed professor of gynecology at the New York Polyclinic Medical School in 1882, and was recently made professor emeritus. In 1876 he wrote "Hospitals, Their Organization and Construction," for which he received the Boylston prize essay from Harvard Medical School. Dr. Wylie was a member of the New York Obstetrical Society, the New York Pathological Society, the British Gynecological Society, and the Royal Society of Medicine of London.

Nelson Herrick Henry, New York, Columbia University College of Physicians and Surgeons, New York, 1879, member of the New York House of Representatives, formerly adjutant-general of the state and surveyor of the port of New York, veteran of the Spanish-American War, major general of the M. C. N. G. New York, member of the New York Academy of Medicine and of the Society of Foreign Wars, aged 67, died, March 16, of cerebral hemorrhage.

Burton Seymour Harris of Brooklyn, Columbia University College of Physicians and Surgeons, New York, 1904, for four years secretary of the Kings County Medical Society, member of the American Urological Association and the Brooklyn Pathological Society, on the staff of the Wyckoff Heights Hospital, aged 39, died, March 5, of epidemic (lethargic) encephalitis, following influenza.

May Michael of Chicago, Northwestern University Woman's Medical School, Chicago, 1898, member of the Chicago, and the Central States pediatric societies, attending physician to the Chicago Home for Jewish Orphans, on the staff of the Cook County Hospital, the Mary Thompson Hospital and the Chicago-Winfield Tuberculosis Sanatorium, Winfield, aged 47, died, March 15, of pneumonia.

Carlyle Edgar Sutphen, Newark, N. J., Columbia University College of Physicians and Surgeons, New York, 1896, member of the Medical Society of New Jersey, formerly acting medical director of the Newark City Hospital, served in the M. C. U. S. Army, during the World War, aged 51, died, March 7, at the Mayo Clinic, Rochester, Minn., of pneumonia following an operation.

William Caspari, Jr. of Baltimore, Baltimore Medical College, 1902, formerly associate professor of materia medica and pharmacy at the University of Maryland School of Medicine and the College of Physicians and Surgeons, on the staffs of the Maryland General and the Franklin Square hospitals, aged 61, died, February 13, of angina pectoris.

Thomas Oscar Edgar of Dixon, Ill., Northwestern University Medical School, Chicago, 1907, member of the American Academy of Ophthalmology and Otolaryngology, the American Laryngological, Rhinological and Otolological Society and the Chicago Ophthalmological Society, aged 51, died, March 5, of bronchopneumonia.

James Parton Haney, New York, Medical Department of Columbia College, New York, 1892, formerly president of the Council of Supervisors of Manual Arts and director of arts at the New York University Summer School, lecturer, New York University School of Pedagogy, 1895-1899, aged 52, died, March 3, of pneumonia.

William Scott Lawrence, New York, Beaumont Hospital Medical College, St. Louis, 1901, served in the M. C. U. S. Army during the World War, acting assistant surgeon in the U. S. Public Health Service, formerly chief diagnostician for the St. Louis Health Department, aged 46, died, March 8, of cerebral hemorrhage.

Clair Clayton Patch, Chattanooga, Tenn., National Medical University, Chicago, 1906, University of Tennessee College of Medicine, Memphis, formerly on the staff of the Eastern Insane Hospital, died, March 2, of peritonitis.

Philip Louis Hall, Lincoln, Neb., Rush Medical College Chicago, 1883, president of the Central National Bank, the Bank of Mead and the Nebraska Bankers' Association, regent of the University of Nebraska, vice chairman of the Democratic national committee, 1908-1912, aged 73, died, March 14

J McLean Moulder, Kansas City, Kan., Medical College of Ohio, Cincinnati, 1875, member of the Kansas Medical Society, formerly superintendent of the Methodist Hospital, Indianapolis, and superintendent of the Bethany Methodist Hospital, Kansas City, at the time of his death, March 4, aged 67

George Albert McCulloch, Excelsior Springs, Mo., University Medical College of Kansas City, Kansas City, Mo., 1901, served in the M. C. U. S. Army, during the World War, aged 58, died, February 27, of injuries sustained when the automobile in which he was driving was struck by a train

Shailer Emery Lawton, Brattleboro, Vt., University of Vermont College of Medicine, Burlington, 1881, for thirty years superintendent of the Brattleboro Retreat, member of American Psychiatric Association and the New England Society of Psychiatry, aged 69, died, March 4

Agnes Eichelberger, Sioux City, Iowa, Northwestern University Woman's Medical School, Chicago, 1888, formerly medical director of the Sioux City Maternity Hospital, and on the staff of the Samaritan Hospital, aged 58, died, February 28, at Los Angeles

Benjamin Merrill Hopkinson, Baltimore, University of Maryland School of Medicine, Baltimore, 1885, member of the Medical and Chirurgical Faculty of Maryland, supervising dentist of the Baltimore City Health Department, aged 62, died, February 22

Simeon Newton Leo, New York, Bellevue Hospital Medical College, New York, 1869, founder and physician in charge of the Home for Aged and Infirm Hebrews, formerly on the staff of the City Hospital, aged 74, died, March 9, of pneumonia

Charles Nicholas Meriwether, Campbell, Neb., Hospital College of Medicine, Medical Department Central University of Kentucky, Louisville, 1906, served in the M. C. U. S. Army, during the World War, aged 40, died, February 25

John Forsythe McWilliam, Somerville, N. J., Jefferson Medical College of Philadelphia, 1884, member of the Medical Society of New Jersey, veteran of the Spanish-American War, aged 62, died, February 12, of heart disease

Charles Peters Large, Meyersdale, Pa., University of Pennsylvania School of Medicine, Philadelphia, 1900, member of the school board, for several years medical director for Somerset County, aged 45, died, February 26

Ferdinand F. Seeger, New York, New York Homeopathic Medical College, New York, 1869, founder of the Hahnemann Hospital and the Northeastern Homeopathic Dispensary, aged 75, died, February 27, of pneumonia

Arthur Hanford Baldwin, Norwalk, Conn., Hahnemann Medical College and Hospital of Chicago, 1881, aged 68, died, February 18, of a skull fracture sustained when his automobile was struck by a trolley car

Frank T. Shaw, Westminster, Md., University of Maryland School of Medicine, 1864, formerly member of the state legislature, at one time collector of the port of Baltimore, aged 81, died, February 24, of uremia

Samuel A. Campbell, Malvern, Iowa, State University of Iowa College of Medicine, Iowa City, 1875, member of the Iowa State Medical Society, aged 72, died, February 22, at Long Beach, Calif., from senility

Jose Martin Selden, Skyland, N. C., University of the South Medical Department, Sewanee, Tenn., 1903, formerly chief of staff of the Erlanger Hospital, Chattanooga, Tenn., aged 46, died, January 7, at Asheville

Fenton Mercer Nichols, Purcellville, Va., Medical Department of the University of the City of New York, New York, 1885, member of the Medical Society of Virginia, aged 61, died in February, of pneumonia

Samuel Herman Meuer, New York, Gross Medical College, Denver, 1895, on the staffs of the Harlem Hospital, New York, and Sea View Hospital, Staten Island, aged 55, died February 27, of septicemia

David Orr Edson, New York, Columbia University College of Physicians and Surgeons, New York, 1891, on the staff of the New York Orthopedic Hospital, aged 59, died, February 27, of acute secondary anemia

Edwin Dearth Orr, Mount Hope, Wis., Rush Medical College, Chicago, 1883, member of the State Medical Society of Wisconsin, member of the school board, aged 75, died, February 11

Eugene Myron Herbert, Roanoke, Va., Atlanta College of Physicians and Surgeons, Atlanta, Ga., 1902, member of the Medical Society of Virginia, aged 54, died recently, of influenza

John Wesley Ranck, Penns Grove, N. J., University of Pennsylvania School of Medicine, Philadelphia, 1872, also a druggist, aged 78, died, February 18, of pneumonia

David Wesley Harris, Carriers Mills, Ill., College of Physicians and Surgeons, Keokuk, Iowa, 1879, also a druggist, aged 66, died, February 10, of cerebral hemorrhage

William Huckin, Wasco, Ore., Rush Medical College, Chicago, 1903, member of the Oregon State Medical Association, aged 56, died, January 3, of chronic nephritis

Joseph Freeman, Sullivan, Ind., Medical College of Ohio, Cincinnati, 1879, member of the Indiana State Medical Association, aged 68, died, February 19, of carcinoma

Ephraim De Groff, Hackensack, N. J., University of Pennsylvania School of Medicine, Philadelphia, 1863, Civil War veteran, aged 86, died, February 17, of pneumonia

William E. Stedman, Sullivan, Ill., Kentucky School of Medicine, Louisville, 1880, formerly member of the state legislature, aged 75, died recently, of influenza

Stephen D. Doar, McClellanville, S. C., Medical College of the State of South Carolina, Charleston, 1860, Civil War veteran, aged 85, died, January 29, of senility

James C. Harrell, Omaha, Ill., Eclectic Medical College of Pennsylvania, Philadelphia, 1870, also a druggist, aged 75, died in February, of mitral regurgitation

Thomas P. Coldwell, London, Ky., University of Louisville Medical Department, Louisville, 1871, Civil War veteran, aged 81, died, February 26, of senility

Daniel Henry Muir, Newaygo, Mich., University of Michigan Medical School, Ann Arbor, 1871, aged 79, died in January, at Muskegon, of senility

Richard Langford Patteson, Buffalo, Queen's University Faculty of Medicine, Kingston, Ont., Canada, 1885, aged 61, died, February 7, of myocarditis

Francis Othyle Cornwell, Gamesboro, Tenn., University of Tennessee College of Medicine, Memphis, 1912, aged 33, died, February 27, of paralysis

Daniel Aloysius Hanrahan, Stamford, Conn., Bellevue Hospital Medical College, New York, 1893, aged 54, died, February 27, of heart disease

Charles Glendinning Willson, Chicago, Wisconsin College of Physicians and Surgeons, Milwaukee, 1896, aged 63, died, March 7, of chronic nephritis

William Adler, New York, Columbia University College of Physicians and Surgeons, New York, 1896, aged 49, died, February 26, of polyneuritis

Joshua Royston Green, Towson, Md., University of Maryland School of Medicine, Baltimore, 1899, aged 48, died, February 22, of pneumonia

John A. Hunter, Pittsburgh, Starling Medical College, Columbus, Ohio, 1891, Civil War veteran, aged 76, died, January 22, of pneumonia

Harry Hilton Brown, Jasper, Tenn., University of Tennessee College of Medicine, Memphis, 1921, aged 26, died, February 21, of tuberculosis

Mary Lavina Briggs, Dryden, N. Y., University of Michigan Medical School, Ann Arbor, 1879, aged 74, died, January 12, of pneumonia

W. E. Hall, Hallsburg, Texas, Chicago Homeopathic Medical College, Chicago, 1883, aged 75, died, February 20, following an operation

William Martin Lawyer, Cambridge, Ohio, College of Physicians and Surgeons, Chicago, 1905, aged 53, died, February 20, of influenza

Robert A. Davis, Brooklyn, Louisville Medical College, Louisville, Ky., 1878, also a druggist, aged 70, died, February 23, of asthma

Douglas P. Adams, Columbus, Ohio, Cincinnati College of Medicine and Surgery, Cincinnati, 1892, aged 82, died, February 21, of senility

Benjamin F. Wolfe, Jasper, Mo., College of Physicians and Surgeons, Keokuk, Iowa, 1877, aged 89, died, February 22, of arteriosclerosis

Henry Wilson Geissinger • Grove City, Ohio, Ohio Medical University Columbus, 1897, aged 54, died, February 22, of cardiac asthma

Benjamin Henry Voelbel • Newark, N J, Baltimore Medical College, Baltimore, 1901, aged 48, died, February 21, of heart disease

Harry Edward Diers, Miamisburg, Ohio, Jefferson Medical College of Philadelphia, 1907, aged 38, died, February 24, of heart disease

Martin Luther Dottin, Chicago, Howard University School of Medicine, Washington, D C, 1915, aged 31, died, January 12 of diabetes

Peter Cavanagh, Schuyler, Neb, University of Michigan Medical School, Ann Arbor, 1883, aged 66, died, January 11, of pneumonia

Tony L Bryan • Evansville Ind, Medical College of Evansville, 1882, aged 64, died February 23, of asthma and heart disease

Elmer Hinman Dwell • Northwood, Iowa, Northwestern University Medical School, Chicago, 1899, aged 48, died, February 28

Thomas Parry Tyson, Wadsworth, Nev, University of Pennsylvania School of Medicine, 1890, was shot and killed, February 17

Rufus Berley Epting • Greenwood S C, University of Maryland School of Medicine Baltimore, 1885, aged 65, died, February 18

Ellis Wolcott Crater • Oceanport, N J, Medical Department of Columbia College, New York, 1878, aged 65, died, February 22

Clarence W Webb • Wellsboro, Pa, College of Physicians and Surgeons, Baltimore, 1879, city physician, aged 67, died, February 6

William M Casey, Seymour, Ind, Medical College of Ohio, Cincinnati, 1878, aged 75, died, February 27, of cerebral hemorrhage

Hugh James Linn, Oakland Calif, University of Pennsylvania School of Medicine, Philadelphia, 1878, aged 72, died, February 9

Gabriel C Boudousquie, New Orleans, Medical College of Alabama, Tuscaloosa, 1893, aged 52, died recently, of pneumonia

Jules G Belknap, Sulphur Springs, Ark (licensed Arkansas, 1903), aged 67, died, February 26, of influenza and pneumonia

John E Gilmore, Baldwin, Iowa, Medical Department University of Iowa, Keokuk, 1867, aged 83, died, February 24, of senility

Espy L Smith • Chicago, Chicago Homeopathic Medical College, Chicago, 1883, aged 70, died, March 5, of heart disease

Charles Rufus Whitney • Fonda, Iowa, Rush Medical College, Chicago, 1894, aged 57, died, February 21, of heart disease

Daniel Orville Abrams, Independence Mo, Rush Medical College, Chicago, 1884, aged 75, died, February 27, of heart disease

Uberto H Merson, Anderson, Ind, Pulte Medical College, Cincinnati, 1886, aged 59, died, March 3, of cerebral hemorrhage

Ulysses Grant Richardson, Chicago Barnes Medical College, St Louis, 1895, aged 56, died, March 13, of pneumonia

Maurice Isaac Heider, Philadelphia, Jefferson Medical College of Philadelphia, 1891, aged 57, died, February 14

George Franklin Ketcham, Brooklyn, Long Island College Hospital, 1876, aged 66, died, February 14, of carcinoma

Frank Caldwell, Cincinnati, Medical College of Ohio Cincinnati, 1882, aged 65, died, February 14, of heart disease

Luke Fox, Tacoma, Wash, Detroit College of Medicine and Surgery, Detroit, 1895, aged 49, died, February 20

Robert S Wilson, Grimesville Texas, St Louis Medical College, St Louis, 1876, aged 67, died February 20

William Joseph Johnstone • Boston Tufts College Medical School, Boston, 1896, aged 60, died, February 13

Benjamin J Milam, Macon Mo, Jefferson Medical College of Philadelphia, 1877, aged 74, died, February 17

Arthur A Milligan, Rogers Ark, Physio-Medical Institute, Cincinnati, 1883, aged 63, died, February 9

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNALS BUREAU OF INVESTIGATION OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

FRANZ C A GOERSS

How Oshkosh, Wisconsin, Dealt with an "Advertising Specialist"

Franz Carl Anton Goerss who has been an 'advertising specialist' for years last December made the mistake of opening an office in Oshkosh Wis On January 18 on the complaint of the Social Medical Club of Oshkosh, through its secretary, Dr Edward J Campbell Goerss was arrested for advertising in the *Daily Northwestern* Oshkosh to cure venereal disease, which is contrary to the Wisconsin statutes Goerss first pleaded not guilty but later changed his plea to 'guilty' and was fined \$100 and costs The local society followed up the matter and on March 3 Goerss Wisconsin license was revoked in the Circuit Court Goerss has left Wisconsin

Goerss himself is a somewhat insignificant specimen of the genus quack but his case is of interest because it points a moral For years this man has been practicing medicine and will be shown later the evidence indicates that he was never graduated in medicine and there is reason to believe that the various state licenses that this man holds have been obtained by misrepresentation or fraud

CLAIMS GRADUATION BY ERLANGEN UNIVERSITY

Goerss claims graduation from the University of Erlangen Germany He made this claim when he applied for a license from the Wisconsin Board of Medical Examiners in 1907 At that time he declared under oath that he had been graduated in 1869 by the Frederick Alexander University Erlangen Bavaria Germany As will be shown later the state authorities of Illinois as long ago as 1893, took up officially with the University of Erlangen the question of Goerss graduation and published the reply from the University of Erlangen to the effect that no man of the name of Franz C A Goerss or any one of the name of Goerss was ever graduated either in 1869 or for ten years previously or ten years subsequently (1859 to 1879) In Goerss' application to the Wisconsin board he also swore that he had taken three courses of lectures at the Berlin Polytechnic Seminary

WHAT ILLINOIS OFFICIALS FOUND

Some years previously Goerss had applied for a state license in Illinois In this connection we cannot do better than publish verbatim a few paragraphs that appeared Dec 31 1894 in the Seventeenth Annual Report of the State Board of Health of Illinois

'Case of Franz C A Goerss On March 23 1889 Franz C A Goerss filed his application for the State certificate entitling to practice medicine and surgery in Illinois He presented a diploma purporting to have been issued by the University of Erlangen Bavaria, dated Jan 26 1869 with his affidavit that said diploma was the genuine diploma of that institution and has been issued to him after due examination

He presented also letters of recommendation from medical men of East Saginaw and Detroit and paid the fee of \$5

'On March 29 the receipt of his fee and application were acknowledged and he was asked to furnish letters from physicians residing in this State Replying he said

I am not acquainted in America and send you the names of the doctors whom I know I would ask you to send either the license or my diploma

On the 12th of May he writes to know whether the Board has decided his case and says

Although I am poor and poor but \$150 I would gladly pay \$100 to get my license if it can be more quickly obtained with money

and his fee and his fee

presented a letter of recommendation signed by Dr. G. Schlick and Dr. J. E. Harper of Chicago, and upon these credentials a State certificate was issued him.

"On Jan. 14, 1891, a letter was received from the Western Pennsylvania Medical College, asking for information concerning the professional standing of F. C. A. Goerss, who had presented to that college his diploma from Erlangen, Bavaria, and desired the endorsement of its faculty. Secretary replied, giving the history of the case. On April 15, 1893, a letter was received from Chicago in which it was charged that Goerss had purchased his diploma of Jno. Buchanan of New York. A letter was addressed July 31, 1893, to the dean of the University of Erlangen, asking whether the diploma of that institution had been issued to Goerss. To this he replied:

I have had the list of the graduates of 1869 very carefully examined also the lists for ten years before and after (1859-1879) and am convinced that the name Franz C. A. Goerss, or the name Goerss at all does not occur in them.

"Notice was sent to the Board's attorney in Chicago to be served on Goerss to appear at this meeting and show cause why his certificate should not be revoked for unpro-

Menasha, Wis., who sent in one of Goerss' preliminary advertisements and asked for some information on the man. Dr. Rogers was sent such material as the Propaganda department had regarding Goerss and was asked to bring the matter to the attention of the local county officials. Dr. Rogers turned the facts over to the Social Medical Club of Oshkosh, and that local organization through its secretary, Dr. Edward J. Campbell, immediately started an investigation of Goerss and his methods.

Preparatory to opening his office in Oshkosh, Goerss, like most advertising quacks, laid down a preliminary barrage of advertising. He seems to have especially favored the *Oshkosh Northwestern* and this paper was perfectly willing to be so favored. In the *Northwestern* for December 12 there appeared an advertisement, published in news style, with this heading:

"DR. GOERSS WILL SOON BE READY. The European Specialist Hopes to Announce His Opening Within a Few Days. Not a Little Speculation Has Arisen Regarding the Location in Oshkosh of a Distinguished European Medical Savant.

Then followed more than half a column of puffery and falsehood. One of the paragraphs in the article read:

'Dr. Goerss is a medical graduate of the Royal College of Physicians and Surgeons, Edinburgh, Scotland, one of the most famous universities in the world and one of the most difficult to receive an M.D. degree from. Dr. Goerss also carries the degree of M.D. from Heidelberg, Germany and from Toronto University, Canada. An array of medical degrees which are probably not possessed by any other physician in the United States.'

FAKING THAT WAS NOT EVEN CLEVER

This paragraph illustrates the type of mind that goes with quackery. Goerss first claimed to be a graduate of the "Royal College of Physicians and Surgeons, Edinburgh, Scotland, one of the most famous universities in the world, and one of the most difficult to receive an M.D. degree from." There is no "Royal College of Physicians and Surgeons, Edinburgh." There is a "Royal College of Physicians, Edinburgh" and there is a "Royal College of Surgeons, Edinburgh." Neither one of these is either a university or a college in the American sense, each is a licensing body. Goerss might as well have claimed that he was a "graduate of the State Board of Medical Registration and Examination of Kansas, one of the most famous universities in the world and one of the most difficult to receive an M.D. degree from." Such a statement would have been just as sensible as the one that he published and more nearly accurate because, as a matter of fact, Goerss has been granted a license by Kansas. Goerss also made the statement that he "carries the degree of M.D. from Heidelberg, Germany, and from Toronto University, Canada." Two more falsehoods, Goerss was never graduated by Heidelberg and is utterly unknown to the University of Toronto.

In another of the Oshkosh advertisements Goerss claimed to have the endorsement of "Jefferson Medical University, Philadelphia." There is no "Jefferson Medical University." Jefferson Medical College of Philadelphia wrote that Goerss is unknown to them.

All of the facts in the case of Goerss were brought to the attention of Mr. D. K. Allen, District Attorney of Winnebago County by Dr. Edward J. Campbell, Secretary of the Social Medical Club of Oshkosh. The people of Oshkosh and vicinity owe Dr. Campbell and District Attorney Allen a debt of gratitude in driving this quack from their State.

The *Oshkosh Northwestern*, instead of standing for the rights and protection of the public in this matter, has shown itself as morally culpable as Goerss in deceiving the public and violating the Wisconsin statutes. It is a pity that the Wisconsin law does not hold newspapers that publish illegal advertisements equally guilty with the advertisers. We are informed that Goerss while in Oshkosh was merely a hireling and that the individuals behind him were P. J. and William Surand.

THE SUCCESSORS OF GOERSS

Even after Goerss had been prosecuted and driven from the state the *Northwestern* failed to print anything relative to the departure of Goerss and immediately opened its adver-

Some typical Goerss advertising. The specimen on the left appeared in a Bartlesville, Okla. paper in 1919 when Goerss was the "Edinburgh Specialists." The other two specimens are recent advertising from the *Daily Northwestern* of Oshkosh, Wis. Note the claims in the advertisement on the right that Goerss is a graduate of the Royal College of Physicians and Surgeons, Edinburgh, Scotland. It would have been just as sensible to have said that he was a graduate of the State Board of Medical Registration and Examination of Kansas. The Royal College of Physicians, Edinburgh and the Royal College of Surgeons, Edinburgh do not graduate anybody; they are licensing bodies. Notice also that Goerss claims the degree of "M.D. from the University of Heidelberg, Germany, and from Toronto University of Canada." Goerss was never graduated by Heidelberg and is unknown to the University of Toronto.

professional and dishonorable conduct, but the notice was returned with the information that Goerss had left the State and was at present in San Francisco. The notice will be served on him as soon as his address can be ascertained.

In spite of this published record, Goerss seems to have obtained licenses in Kansas, Oklahoma and Arkansas, as well as in Wisconsin. In 1919 Goerss was advertising as the "Edinburgh Specialists at Bartlesville, Okla." Presumably at that time "Berlin Specialists" or "Erlangen Specialists" would not have made a good advertising slogan.

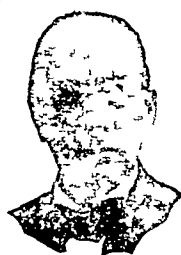
THE OSHKOSH ADVERTISING CAMPAIGN

Goerss' activities in Wisconsin were first brought to the attention of THE JOURNAL by Dr. Ronald B. Rogers, President of the Twin City Medical Association, Neenah, and

tising pages to "Dr H R Harvey and Associated Specialists" who held themselves out as 'Successors to Dr Goerss' Dr Campbell tells us that the individual who registered in Winnebago County for the H R Harvey outfit is one George L Gibbs of Milwaukee To complete the records in this matter the following facts taken from data in the files of the American Medical Association may be of interest

H R Harvey first located at Rockford, Ill, in 1915, where, apparently, he promptly went into the advertising business Advertisements of the "weak men" type of "Drs Francis and Harvey" appeared in the Rockford papers Francis, with whom Harvey was associated, seems to have been Stanley D Francis who for a while advertised as "Dr S D Francis and Associated Specialists"

From
Oshkosh, Wis.
2/23/22



Dr. Goerss

100 Main St., Oshkosh, Wis

Wishes to announce he has disposed
of his office equipment and
practice to

Dr. H. R. Harvey

and Associated Specialists

who, at this time, wish to assure all,
of as good, if not superior treat-
ments and services.

**CONSULTATION AND
EXAMINATION FREE**

After Goerss had been found guilty of violating the Wisconsin statutes and fined and his Wisconsin license revoked the Oshkosh Northwestern carried an advertisement stating that Dr H R Harvey and Associated Specialists had taken up Goerss' business at the old stand! We are informed that Dr H R Harvey and Associated Specialists as represented in Oshkosh is really one G L Gibbs M D of Milwaukee who has Wisconsin license No 941 granted in 1900 Gibbs is said to have a nurse in full regalia in his office and is continuing the practice of Dr Goerss

S D Francis and his brother G Gordon Francis appear to have operated a string of advertising offices in various parts of the country Harvey was apparently merely a hired man G G Francis in August, 1921, wrote on the stationery of George L. Gibbs, M D, of Milwaukee a letter to a physician whom he thought he was going to hire to run one of his, Francis', advertising offices Francis instructed the man to go to Rockford and report to Harvey who would instruct him into the ways and means of conducting an advertising office Francis wrote that the man would receive a salary of \$40 a week and receive 25 per cent of all money taken in over \$500 a month He wrote further I also desire that you not tell Dr Harvey too much or, in fact, anything about our financial arrangements"

In closing, it is pertinent to ask what will the other states (Kansas, Oklahoma, etc.) that have granted Goerss a license on the basis of claims that have been shown to be fraudulent do in the matter of revoking his license?

Correspondence

THE ALKALINE TIDE IN URINE, AGAIN

To the Editor—Referring to the article of Drs Hubbard and Munford in THE JOURNAL, February 3, it is remarkable that a substantial agreement in experience leads to so wide a divergence of opinion In estimating the personal equation, it must be admitted that I have often been criticized for being too literal and pragmatic While my letter in THE JOURNAL, Dec 9, 1922, referred to the possibility of an alkaline tide in a "transcendental sense," the term alkaline to me means a change of color with phenolphthalein requiring an appreciable addition of acid to discharge it The same personal tendency makes me eliminate certain of Brownings poems over which many persons pore for hours, and litmus as an indicator, whereas Drs Hubbard and Munford have been more patient and have presented a beautiful table of correspondences in the amphoteric reaction

Their method of estimating acidity directly in terms of cubic centimeters of tenth-normal alkali required to neutralize the hourly excretion of urine is much more sensible than my 'acid units,' except that for some purposes the larger numbers are more convenient and, as in the case of large and small calories, it is merely a question of placing a decimal point

It seems to me that, aside from the question of adopting the doctrine of relativity and designating as alkaline what is merely a reduction of acidity, Drs Hubbard and Munford have ignored the fact that the expression "acid and alkaline tide in urine" as long employed in medical literature, usually if not always refers to the belief that this tide occurred conversely to digestive secretion i e, that the urine became alkaline shortly after a meal while the stomach was secreting acid (the tidal idea antedating the understanding that this acid was hydrochloric) and subsequently acid while the intestinal and great tributary glands were secreting alkali

It is this kind of tide that I deny not only on empiric evidence but also because a true understanding of the process of digestion shows that there cannot be any true tidal action, although in some degree and with various qualifications, certain tendencies in support of the old theory may be shown to exist, but in a transcendental sense which would only confuse the ordinary investigator Table 1 of the authors mentioned in the absence of a statement of mealtimes and general make up of the meals and the lack of a separation of the urine from 7 p m to 7 a m does not show any evidence of such a tide except that the very moderate reduction of acidity after what may have been taken as the breakfast hour might be so interpreted If they will subdivide the urine more accurately, with reference to mealtimes, they will find various inconsistencies Sometimes even after meals rich in acid-producing substances the mere elimination of an excess of water in advance of the development of acid radicals from ingesta or as a result of catabolism of tissues will render the urine low not only in degrees of acidity but also in amount of alkali required to neutralize per hour immediately after a meal This, of course looks like a verification of the alkaline tide theory if we use the term in a relative sense but the more plausible explanation is that the elimination of water precedes that of acid radicals which require more time for absorption or even for development

In persons leading what is called a sedentary life the evening meal often perhaps usually contains about half the total nourishment of the twenty-four hours and rather more than half of the acid factors Such persons are rather likely to have a low pH in their urine after dinner Thus the clock (not the

mention the occasional lengthening of the day to 25 or 26 o'clock) is very likely to be highly acid in degrees (from 90 to 100 not very rarely) and disproportionately abundant. Often the urine from 18 to 24 o'clock will represent 300 cc of tenth-normal solution (the total for the day from Table 1 being 321.10, if my understanding of the data is correct and I have made no mistake in arithmetic, this agreeing substantially with my own averages). At any rate, more than a quarter of acid elimination will occur in the last quarter of the day, and by morning the residue will be very low. It is not materially increased by the usual light breakfast, so that it is to be expected that the low point of acid elimination will occur sometime during the morning before any considerable quantity of acid radicals are introduced by ingestion or developed by catabolism. Probably farmers, soldiers and persons who eat a hearty breakfast and no luncheon would show corresponding differences in the curve, if the term curve is applicable to a fluctuation that is always exceedingly irregular.

A. L. BENEDICT, M.D., Buffalo

"DIVERTICULUM OF BLADDER IN THE INGUINAL CANAL"

To the Editor—In reference to diverticulum of the bladder in the inguinal canal, described by Dr. Stein in *THE JOURNAL*, March 3, it is interesting to note that in the surgical literature of one hundred years ago, frequent mention is made of inguinal cystocele. Samuel Cooper of London, in his *Surgical Treatise (First Lines of Practice of Surgery with Notes)*, by Alexander H. Stevens, M.D., Vol. 2, New York, James V. Seaman, 1822, discusses at considerable length "Cystocele or Hernia of the Bladder." He writes "The protrusion of the bladder at the abdominal ring is the most frequent. It is generally seen in male subjects, a large proportion of whom are considerably advanced in life, and have been repeatedly afflicted with retention of urine." As the author advises waiting until the fourth day to relieve, by operative procedures, complete retention of urine when catheterization is impossible, stating this to be the accepted dictum of the most eminent surgeons, such practice might account for the frequent occurrence he describes. To quote further "Contrary to what is usual, however, a few instances are recorded in which the protrusion of the bladder at the abdominal ring has been noticed in young persons and even females. A suspicion has originated that the disease may even sometimes be congenital."

Cooper cites numerous cases. Plater, a physician at Bale, in attending a case of retention of urine, found the patient's scrotum considerably swelled. Thinking this might be the underlying difficulty in preventing urination, he punctured the tumor, when to his surprise urine burst forth. Guyon, Vander Wiel and others reported similar cases. Verdier is mentioned as recording numerous cases in which urinary calculi had made their way out of the groins by ulceration.

Pott, in operating for supposed inguinal hernia of the intestines, by mistake cut away a protruding portion of the bladder. Recovery being effected, the operation was advised for such bladder condition.

Even bilateral inguinal and femoral hernia of the bladder is described.

T. L. EVERLY, M.D., Denver

Creative Intelligence Confined to Few—The great mass of humanity has never had anything to do with the increase of intelligence except to act as its medium of transfusion and perpetuation. Creative intelligence is confined to the very few, but the many can thoughtlessly avail themselves of the more obvious achievements of those who are exceptionally highly endowed.—Robinson. *The Mind in the Making*

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address but these will be omitted on request.

THE BITES OF INSECTS

To the Editor—Inform me where I can obtain information on the treatment of bites and stings of (1) black ants, (2) spiders and (3) kissing bugs, or as some call them vinegerones. I believe that black spiders and kissing bugs are quite common in Arizona, but we have a few here. (4) Also tell me the latest treatment for the dermatitis caused by poison oak and poison ivy.

WILLIAM G. CARSON, M.D., Cutler, Colo.

ANSWER—1 According to Castellani and Chalmers' *Manual of Tropical Medicine*, a satisfactory treatment for the bites of black ants is a local application of 5 per cent phenol (carbolic acid).

2 For spider bites the same authors recommend application of a proximal ligature, incision of the wound and application of a mild alkali, such as diluted ammonia water or a weak solution of potassium carbonate. A strong solution of potassium permanganate is suggested. An article on the black spider was published in *THE JOURNAL*, Feb. 14, 1920, p. 479.

3 The name vinegerone is not properly applied to the insects known as kissing bugs. The vinegerone is the whip-tailed scorpion, *Thelyphonus giganteus*. It produces an irritating excretion which has an odor resembling vinegar. The name "kissing bug" has been applied to several species of the order Reduviidae, such as *Rasahus biguttatus*, *Opscoetes personatus*, *Melanolestes picipes* and *Conorhinus sanguisugus*. Their bites are painful, and may require medical treatment. Tincture of iodine and phenol ointment have been used with success (*THE JOURNAL*, July 22, 1899, p. 220).

4 The treatment for the dermatitis produced by poison oak and poison ivy is thorough washing of the parts with alcohol or, cautiously, with gasoline, or, if the parts are not too tender, with soap and water. Care must be taken that the skin is protected against contact with more of the irritant poison from clothing, tools and the like which had previously been contaminated by touching the plants.

CERTIFICATE OF NATIONAL BOARD OF MEDICAL EXAMINERS

To the Editor—1 What are the advantages of passing the National Medical Board Examination? 2 Does California reciprocate with Massachusetts? Please omit name.

M. C. M., Mass.

ANSWER—1 The advantages of passing the National Board of Medical Examiners are:

(a) The examination is rapidly becoming recognized as a thorough test of a physician's qualifications, and its certificate, therefore, carries with it a corresponding distinction.
(b) Holders of its certificate are eligible for admission to the final examinations of the Conjoint Examining Board of England and the Triple Qualification Board of Scotland.
(c) Its certificates are now recognized by the licensing boards of twenty-three states, which makes the holders eligible for license in those states without further examination. These states are:

Alabama	Idaho	Nebraska	Rhode Island
Arizona	Iowa	New Hampshire	South Carolina
Colorado	Kentucky	New Jersey	Texas
Delaware	Maryland	North Carolina	Vermont
Florida	Massachusetts	North Dakota	Virginia
Georgia	Minnesota	Pennsylvania	

The secretary of the board is Dr. John S. Rodman, 1310 Medical Arts Building, Philadelphia 2 No.

TREATMENT OF DRUG ADDICTS WITH ALCOHOL

To the Editor—At present it seems that we may experiment with the treatment of drug addiction. It has been proposed to reduce gradually substituting alcohol for the narcotic. Since it has been reported that drug addicts cannot take alcohol would it be dangerous to substitute alcohol hypodermically for morphine?

K. S. New York

ANSWER—Drug addicts can and do take alcohol. Instances are known in which drug addicts have taken whisky copiously in addition to morphine. Although alcohol is absorbed when given hypodermically, there is a sensation of burning and smarting. It would seem foolish to attempt to treat opium addicts by substituting alcohol for the drug.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

IDAHO Boise April 4 Dir Mr Harry L Fisher Boise
MONTANA Helena April 3 Sec Dr S A Cooney Power Bldg
Helena

Arizona October Examination

Dr Ancil Martin secretary, Arizona State Board of Medical Examiners, reports the written examination held at Phoenix, Oct 2-3, 1922. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Of the 3 candidates examined, 2 passed and 1 failed. Seven candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad	Per Cent
Tulane University		(1920)	85
University of Michigan Medical School		(1921)	85.5
College	FAILED	Year Grad	Per Cent
Hahnemann Medical College and Hospital of Chicago		(1921)	63.2
College	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
College of Medical Evangelists		(1919)	California
Louisville Medical College		(1892)	Alabama
Tulane University		(1908)	Louisiana
Marion Sims College of Medicine		(1892)	Missouri
St Louis University School of Medicine		(1905)	Utah
University of Buffalo		(1894)	New York
University of Tennessee		(1919)	Tennessee

Colorado October Examination

Dr David A Strickler, secretary, Colorado State Board of Medical Examiners, reports the written and practical examination held at Denver, Oct 10, 1922. The examination covered 8 subjects and included 80 questions. An average of 75 per cent was required to pass. Of the 10 candidates who took the physicians' and surgeons' examination, 2, including 1 osteopath, passed, and 8 candidates failed. Thirty-four candidates were licensed by reciprocity, and one candidate was licensed on government credentials. The following colleges were represented:

College	PASSED	Year Grad	Per Cent
St Louis College of Physicians and Surgeons		(1920)	75.2
Osteopath			75.5
College	FAILED	Year Grad	Per Cent
Illinois Medical College		(1897)	55
Kansas City College of Medicine and Surgery		(1921)	62.7
Kansas City University of Physicians and Surgeons		(1922)	56.3
St Louis College of Physicians and Surgeons		(1922)	58.1
University of West Tennessee (1918) 63 (1921) 55.9		(1922)	43.3
Undergraduate			59.3
College	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
University of Arkansas		(1916)	Arkansas
College of Medical Evangelists		(1921)	California
Howard University		(1904)	Mississippi
College of Physicians and Surgeons Chicago (1908)		(1910)	Illinois
Northwestern University		(1910)	Illinois
Rush Medical College		(1896)	Kansas
Drake University College of Medicine		(1910)	Iowa
Keokuk Medical College College of Phys and Surg		(1906)	Iowa
State Univ of Iowa Coll of Med (1889) Nebraska		(1916)	Iowa
University of Kansas		(1920)	Kansas
Louisville Medical College		(1894)	Oklahoma
Tulane University		(1896)	Louisiana
Detroit College of Medicine and Surgery		(1921)	Michigan
Beaumont Hospital Medical College		(1892)	Illinois
St Louis College of Physicians and Surgeons		(1903)	Illinois
North Dakota (1909) Missouri			
St Louis University School of Medicine (1903) (1909)			Illinois
University Medical College of Kansas City		(1908)	Wyoming
Washington University		(1921)	Missouri
Creighton University		(1914)	Nebraska
University of Nebraska		(1902)	Nebraska
Felectic Medical College		(1912)	Ohio
Starling Medical College		(1890) W Virginia	
University of Pennsylvania		(1921)	Penna
Meharry Medical College (1906) Arkansas		(1907)	Mississippi
(1908) Tennessee			
Tennessee Medical College		(1900)	Tennessee
University of Virginia		(1917)	Virginia
College	ENDORSEMENT OF CREDENTIALS	Year Grad	Endorsement with
Rush Medical College		(1917)	U S Navy

Book Notices

ALOHA AROUND THE WORLD By Karl Vogel. With an Introduction by Commodore Arthur Curtiss James. Cloth Price \$3.50. Pp 274 with 95 illustrations. New York G P Putnam's Sons 1922.

An interesting preface to this book by Commodore Arthur Curtiss James tells how he took the guests around the world in his yacht *Aloha* thus fulfilling a dream of years, unfulfilled with previous vessels. Among the guests was Dr Karl Vogel who kept a daily diary of the progress of the trip charting the position of the yacht and the distance covered each day. His book is distinctly one for other enthusiastic yachtsmen, for he gives fully all those points that are most likely to interest the sailor rather than the tourist. The trip proceeded leisurely the days were spent in the usual mild amusements indulged in on such vessels. From the standpoint of the reader, the book would be greatly improved by condensation and the elimination of repetition and non-essential details. It would then lose however in representing a good record of the trip for those who took part in the voyage. The book is nicely printed, and is illustrated with numerous photographs taken en route.

DER CHRONISCHE HEREDITARE HÄMOLYTISCHE IKTERUS (Konstitutionelle Hypersplenie) Fine nosographische Studie von F Neulengracht. Paper Pp 226 with illustrations. Leipzig Dr Werner Klinkhardt 1922.

This is a discussion of every known phase of hemolytic icterus. Although the book does not enrich our knowledge of this condition by many new facts, it is of great value because it brings to our attention in a clear and compact form the author's methods of examination and deductions from his experience—he saw fifty cases in the course of four years—and it reviews the literature. The role assumed by hereditary influence is so important that to it the author applies the term dominant factor, on the basis of mendelian inheritance. Many cases may show some evidence of an early existence, such as a severe icterus neonatorum. Familial existence is well known. The rare occurrence of a high color index renders it possible that the condition under observation may belong to another group. Vital staining reveals that from 20 to 50 per cent of the red cells are immature. The author lays great stress on increased fragility. Although this occurs in many other conditions, it is never so marked or so constant as in hemolytic icterus. He decries the value of reports of many observers because they do not take into consideration the influence of shaking the specimen, the effect of temperature, and normal physiologic variations of the red cells. This symptom is a phenomenon of regeneration. Jaundice is always present, but may be so slight as to escape unnoticed. Dissociated jaundice is always found in the blood serum. The spleen may not be found enlarged on physical examination but at postmortem examination or at operation it is found enlarged. The author describes in detail the clinical course, the pathologic anatomy, the progress of the disease, the complications of which gallstones are not infrequent and cites many examples of the salutary effect of splenectomy, which he considers the best form of treatment. The theory that best explains the cause is hypersplenism. The last chapter is devoted to a citation of case histories.

THE TREATMENT OF FRACTURES WITH NOTES UPON A FEW COMMON DISLOCATIONS By Charles Locke Scudder M.D. Consulting Surgeon to the Massachusetts General Hospital. Ninth edition. Cloth Price \$8.50. Pp 749 with 1252 illustrations. Philadelphia W B Saunders Company 1922.

This work comes to us too well known through many previous editions to require any detailed criticism here. The intelligent and critical analysis of the underlying anatomic, pathologic and mechanical principles shown by the author combined with his masterly skill in presenting in minute detail the entire subject of fractures undoubtedly makes this work one of our greatest treatises on the subject. The book is voluminous. It is profusely almost extravagantly illustrated by line and wash drawings, photographs and roentgenograms. Excellent drawings and

to demonstrate the mechanism of displacement, a picture that the operator must be able to visualize if his treatment is to be intelligent. It is worth while mentioning that the text is not padded in description and in illustration with a host of methods and of apparatus that are obsolete. That the material presented is the development of a tremendous personal experience is seen in the chapter on the femur. The author's advocacy of skeletal traction, of Carrel-Dakin treatment in compound fractures, and of conservatism in the matter of open reduction in the majority of fractures, impresses the reader of experience as based on sound principles. Books that actually teach surgical treatment are rare. This is such a book.

LESSONS IN PATHOLOGICAL HISTOLOGY By Gustave Roussy, Professeur Agregé, Chef des Travaux Pratiques d'Anatomie Pathologique à la Faculté de Paris and Ivan Bertrand, Chef de Laboratoire Délégué à la Clinique des Maladies Nerveuses de la Faculté de Paris. Translated from the second French edition by Joseph McFarland, M.D. Sc.D. Professor of Pathology and Bacteriology in the Medical Department of the University of Pennsylvania. Leather. Price, \$3.25. Pp. 278, with 124 illustrations. Philadelphia: Lea & Febiger, 1922.

In this book, the right-hand pages present excellent black and white microscopic drawings, while the left-hand pages explain what is seen. The student is told, first, what the organ presents in the way of characteristic features on the naked eye inspection of the section, and then what may be seen with the microscope. The book is a capital guide to the microscopic study of morbid changes in tissues, and may be recommended without hesitation for that purpose.

Medicolegal

Insufficient Evidence of Malpractice or Maltreatment

(*Harby v Administrator v Berea College et al* (Ky.) 244 S. W. R. 775)

The Court of Appeals of Kentucky, in affirming a judgment in favor of the defendants, says that the plaintiff sought to recover damages for the death of his daughter on account of alleged negligent, unskilful and wrongful treatment of her while she was an inmate of the hospital operated in connection with the college, she being afflicted with measles, which developed into pneumonia, followed by her death. Besides the college, the defendants were the chief surgeon in charge of the hospital, and his assistant, the superintendent of the hospital, and the superintendent of the nurses in it.

The patient contracted the measles, was put into the hospital, January 23, and died from pneumonia, February 4. The plaintiff introduced three physicians, not connected with the college or its hospital, who visited the patient, either, January 30 or 31, and they diagnosed the case as one of patchy pneumonia, a condition which they thought had been developing for, perhaps, forty-eight hours, although they were not absolutely sure of that fact. They were furnished, and examined, the chart made by the nurse or nurses in charge of the patient, on which was recorded not only her temperature, respiration, etc., but also the treatment given her, and they testified in substance that they saw nothing indicating improper treatment. Of course they could not tell when the physician in charge of the patient discovered or detected the development of pneumonia. That physician, a woman, did not testify, nor was any statement of hers proved. No admissions of any dereliction of duty were proved against either of the defendant physicians further than that the chief surgeon stated that he had not discovered the pneumonia before the examination of the patient by the physician witnesses because the woman physician had charge of her and he was busily engaged with the numerous other patients then confined in the hospital there being an epidemic of influenza and measles prevailing at the time. It was furthermore testified that on some occasions, but how long prior to the development of the pneumonia was not shown the patient was permitted to walk from her bed to the toilet, a distance of 25 feet, but it was proved that the hospital was warm and comfortable at the time, as well as kept in the

best condition. Some of the physician witnesses testified that it might not be the best and most approved method to allow such action on the part of the patient, but they did not pretend to say that the pneumonia could be attributed with any degree of certainty to it, nor does the court understand that their testimony condemned it in an ordinary case of measles. There was an attempt to make much of the testimony of a witness that a nurse struck the patient on the shoulder while in the toilet, and at one time declined to hand her a drink of water. But the same witness testified that the patient was noisy and somewhat unruly, and that the striking was only a gentle stroke on the shoulder, with a request that she must not make so much noise, also, that the incident did not cause the patient to be excited, nor did it in any wise unnerve her so far as the witness could observe. Of course, if it had been shown that the nurse was guilty of acts of such cruel and brutal nature as to be reasonably calculated to produce nervousness, excitement or other conditions to which the development of pneumonia could be reasonably attributed, a different question would be presented. But the court is convinced, from all the evidence in the case, that the plaintiff failed to sustain his alleged cause of action.

Physicians and those having in charge the treatment of patients are not required by law to insure their recovery, their measure of duty is to possess such knowledge and skill as is possessed by others similarly engaged in the community, and to exercise ordinary care in the application of their knowledge and skill. That duty does not require the performance of every act which the most cautious and skilful would employ, and before liability will attach it must appear that the damages sued for were the proximate result of some alleged act of omission or commission on the part of the defendant in malpractice cases. Mere speculation or remote probability is not sufficient to fix liability.

Society Proceedings

COMING MEETINGS

Alabama Medical Association of the State of Mobile, April 17 20
Dr H G Perry State Board of Health Montgomery, Secretary
American Association of Anatomists Chicago March 28 30 Dr Lewis
H Weed Johns Hopkins Medical School Baltimore, Secretary
American Association of Pathologists and Bacteriologists Boston, March
29 30 Dr H T Karsner Lakeside Hospital Cleveland Secretary
American Association of Physicians Atlantic City, May 13 Dr
Thomas McCrae 1929 Spruce Street Philadelphia Secretary
American Congress on Internal Medicine Philadelphia April 27 Dr
Frank Smithies 1002 North Dearborn Street Chicago Secretary
American Gastro Enterological Association Atlantic City April 30
May 1 Dr Arthur F Chace 525 Park Ave New York Secretary
American Laryngological Association Atlantic City May 16 18 Dr
George M Coates 1811 Spruce Street, Philadelphia, Secretary
American Laryngological Rhinological and Otolological Society Atlantic
City May 10 12 Dr W H Haskin 40 E 41st St, New York Secy
American Society for Clinical Investigation, Atlantic City April 30
Dr James H Means 15 Chestnut Street Boston Secretary
Georgia Medical Association of Savannah May 24 Dr Allen H
Bunce Healey Building Atlanta Secretary
Illinois State Medical Society, Decatur, May 15 17 Dr W D Chap-
man Silvis Secretary
Iowa State Medical Society Ottumwa May 9 11 Dr T B Throck-
morton Bankers Trust Building Des Moines Secretary
Kansas Medical Society Kansas City May 24 Dr J F Hassig 800
Minnesota Avenue Kansas City Secretary
Louisiana State Medical Society New Orleans April 24 26 Dr P T
Talbot 1551 Canal Street New Orleans Secretary
Maryland Medical and Chirurgical Faculty of Baltimore, April 24 26
Dr J A Chatard 1211 Cathedral Street Baltimore
Mississippi State Medical Association, Vicksburg May 8 9 Dr T M
Dye Clarksdale Secretary
Missouri State Medical Association Joplin May 9 11 Dr E J Good-
win 3529 Pine Street St. Louis Secretary
Nebraska State Medical Association Lincoln May 14 17 Dr R B
Adams 1013 Terminal Building Lincoln Secretary
North Carolina Medical Society of the State of Asheville April 17 19
Dr L B McBrayer Sanatorium Secretary
Ohio State Medical Association, Dayton May 13 Mr D K Martin
131 East State Street Columbus Secretary
South Carolina Medical Association Charleston, April 17 19 Dr
Edgar A Hines Seneca Secretary
Tennessee State Medical Association Nashville April 10 12 Dr Larkin
Smith 154 Eighth Avenue N Nashville
Texas State Medical Association of Fort Worth May 8 10 Dr Holman
Taylor 207 1/2 W 11th Street Fort Worth Secretary
Western Electro-Therapeutic Association Kansas City Mo April 19 20
Dr Charles Wood Fassett 115 E 31st Street Kansas City Secretary

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below

American Journal of Diseases of Children, Chicago

January 1923 25, No 1

- *Physiology of Exercise in Childhood I Study of Normal Children of School Age M Seham and G Egerer Seham Minneapolis—p 1
- *Celiac Disease R Taylor Minneapolis—p 46
- *Treatment of Flat Warts by Internal Administration of Mercury H Fox New York—p 55
- Comparison of Diphtheria Immunity in Mother and in the New Born H O Ruh and J E McClelland Cleveland—p 59
- Chemical Studies of Blood of Mother and Fetus M G Howe and M H Givens Pittsburgh—p 63
- *Colloidal Gold Reaction in Acute Poliomyelitis J C Regan A Litvak and C Regan New York—p 76

Physiology of Exercise in Childhood—Briefly, the Seham found that all forms of exercise produce an increase in the pulse rate and the blood pressure, the increase depending mainly on the type of exercise

Celiac Disease—Taylor's report is based on a study of seven cases, the cardinal features of which agree with those described as being characteristic of celiac disease Abstracts of their records and of the data gleaned from each are given In all the seven patients the disease was preceded by a long period of bad feeding, or by a parenteral infection, or by both Gastric achlorhydria was present in the five cases in which the stomach contents were examined The liver was found smaller than normal in every case As further evidence of the presence of liver pathology there was in one case a complicating Banti's disease, in another case leucin and tyrosin were present in the urine, and in a third case the duodenal juice contained a pathologic pigment It appears that there are four points to be considered in successful dietary treatment (1) In recognition of the achlorhydria, to use soured milk and fruit acids, (2) to supply readily absorbable carbohydrate primarily for its good effect on the liver, (3) to wait patiently for months on a high protein intake before adding starches and fats, and (4) to prevent fecal accumulations which can undergo bacterial decomposition

Treatment of Flat Warts by Internal Administration of Mercury—Fox's experience in trying the method suggested by White is confined to eleven cases, one of which is not suitable for analysis as the patient was treated by another physician with the roentgen ray after she had taken mercury for one week The result in this case was successful at the end of a few weeks Of the ten cases in which the mercury treatment was given a fair trial the result was entirely successful in five In these cases the disappearance of the eruption was absolutely complete in from three to eight weeks There had furthermore, been no return of the disease in these patients at the end of one, three, four and seven months and three years, respectively The treatment consisted solely of the internal administration of mercurous iodid tablets in doses of $\frac{1}{4}$ grain, three times a day Smaller doses were given the younger patients No local remedies whatever were employed In the five unsuccessful cases there was no improvement after two or four weeks of treatment

Colloidal Gold Reaction in Acute Poliomyelitis—In a series of forty-two cases of acute poliomyelitis, including 132 spinal fluids, a study of the colloidal gold reaction was carried out by Regan and his associates There was always a reaction with colloidal gold solution in the case of every poliomyelitic fluid taken during the acute stage of the disease This reduction was constantly in the same zone—the zone of low dilutions, the so-called syphilitic zone In 88 per cent of the spinal fluids examined the reaction occurred in the first six dilutions between 1:10 and 1:320 In fourteen spinal fluids the reaction extended to the seventh dilution (1:640) These patients more or less characteristically presented marked polyneuritic or meningitic symptoms, or else pronounced paralysis In no instance was a normal reaction encountered before the end of the third week of illness In twenty-three patients the spinal fluid was examined as late as the eighth

week, and fifteen, or 65 per cent, had become normal by that time

American Journal of Psychiatry, Baltimore

January 1923 2, No 3

- Psychoneuroses Problems and Lines of Investigation C M Campbell Cambridge Mass—p 367
- *Blood Chemistry in Mental Diseases K M Bowman White Plains N Y—p 379
- Blood Fragility Studies in Certain Psychopathic States T Raphael Ann Arbor Mich. and F C Potter Mercer Pa.—p 409
- *Aporrhagma Reactions in Psychoses J C Whitehorn Waverley Mass—p 421
- *Hematologic Pictures in Endocrine Syndromes Found Associated with Epilepsy H A Patterson Buffalo—p 427
- Long Section Method Contra Cross Section Method in Study of Mental Disease H Lundholm J S Plant and J C Whitehorn Waverley Mass—p 439
- Follow Up Work in Mental and Surgical Cases. E D Bond West Philadelphia Pa—p 445
- Psychology in Medicine F L Wells Boston—p 451
- Observations of Juvenile Court Psychiatrist O G Wiedman Hartford Conn—p 459
- Constitutional Psychopathic Inferior Problem in Diagnosis A E Johnson Philadelphia—p 467
- *Catatonic Dementia Praecox Physiotherapeutics and Results Obtained in Series of Twenty Cases D C Main Washington D C—p 473

Blood Chemistry in Mental Diseases—Two hundred and twenty-nine cases of mental disease were examined by Bowman as to the blood constituents The average findings for blood nonprotein nitrogen, dextrose, uric acid and chlorids were found to be normal for all types of mental disease except psychoses with cardiorenal disease and general paralysis both of which conditions showed increased findings for nonprotein nitrogen and dextrose

Aporrhagma Reactions in Psychoses—The results presented by Whitehorn merely indicate that there is a tendency among some types of psychotic persons to give less than the usual normal reaction to histamin The reaction appears to be sufficiently marked to encourage the hope that analytic procedures for the detection and estimation of certain aporrhagmas may yield information of value in the understanding of mental disorders

Hematologic Pictures in Endocrine Syndromes Associated with Epilepsy—One hundred and twenty-eight cases presenting some endocrine manifestation in an epileptic have been examined by Patterson Of these, the overwhelming majority falls into the pituitary group The leukocytic formula in all these disorders is either distorted or masked by the epileptic hyperleukocytosis

Catatonic Dementia Praecox—Main endorses the value of occupational therapy in this condition He describes what is being done in this field at St Elizabeth's Hospital, Washington D C

Archives of Dermatology and Syphilology, Chicago

February 1923 7 No 2

- *Hydroa Vacciniforme Seu Aestivale F E Seneer and H W Fink Chicago—p 145
- Pityriasis Rosea W J Highman and R H Rulison New York—p 163
- *Myeloid Leukemia of Skin L W Ketron and L A Gay Baltimore—p 176
- *Pityriasis Rubra Pilaris—Familial Type E P Zeisler Chicago—p 195
- Experimental Production of Paraffin Oil Tumors in Monkeys F D Wedman and M S Jefferies Philadelphia—p 209
- Tumor Formation After Injection of Mercuric Salicylate in Vegetable Oil Case Report I C Sutton Anaheim Calif—p 223
- Sporotrichosis E D Crutchfield Galveston Texas—p 276

Hydroa Vacciniforme Seu Aestivale—To the seventy-eight cases recorded in the literature of what they feel can be considered as being cases of hydroa vacciniforme Seneer and Fink add two cases The sun's rays alone were listed as the exciting factor in 80 per cent of the cases Hematoporphyrinuria was present in 175 per cent Heredity apparently plays some part as more than one member of the family was affected in five instances Treatment has been of little avail although ointments containing quinin or esculin have been reported as of value in some cases

Myeloid Leukemia of Skin—Ketron and Gay report the case of a woman aged 63 who noticed an eruption of bluish red nodules along the costal margins early in December, 1916 A few days later she began to have severe pain in

the lower portion of her back and upper abdomen. The nodules rapidly increased in size and distribution, appearing on the head and neck. They were associated with intense itching. Physical examination at this time revealed abdominal tenderness and enlargement of the liver and spleen. The blood examination showed only a secondary anemia. Within a period of two months the nodules had spread over the entire body. They had a mahogany color, and some of them measured as much as 3 cm in diameter. The spleen and liver, however, had decreased somewhat in size, and there was no abdominal tenderness. The nodules then gradually disappeared, leaving only discolored macular areas. In February, 1917, there appeared over the left leg a hemorrhagic eruption. This was of two weeks' duration. Repeated study of the blood showed nothing of special importance. In the beginning of March, 1917, the skin nodules again suddenly made their appearance over the body and in the throat, associated with general weakness, a rise in temperature and enlargement of the spleen and liver. The blood count then for the first time showed the picture of myeloid leukemia. The patient died April 11, about four months after the first eruption of skin nodules, and one month after the blood examination had shown the presence of a myeloid leukemia. Necropsy confirmed the clinical diagnosis.

Pityriasis Rubra Pilaris, Familial Type—Zeisler reports four cases which occurred in one family, a father and three children. This is said to be the first instance of the familial occurrence of the disease noted in this country, although there are two reports of a similar nature from Europe. Evidence is presented that heredity plays a role in the etiology of this rare condition.

Archives of Neurology and Psychiatry, Chicago

February, 1923 9, No 2

- Genesis of Cerebellar Functions F Tilney, New York—p 137
- *Acute and Chronic Chorea G Wilson and N W Winkelman, Philadelphia—p 170
- *Two Cases of Brain Tumor with Ventriculography P Bassoe and C B Davis, Chicago—p 178
- Difference Between Muscular and Neuromuscular Interpretation of Walking W M Kraus, New York—p 184
- Nature of Certain Functional Nervous Disturbances and Their Treatment Along Metabolic Lines R Pemberton, Philadelphia—p 208

Pathologic Anatomy of Chorea—A clinicopathologic study was made by Wilson and Winkelman of a case of Sydenham's and another of Huntington's chorea. In the typical case of Sydenham's chorea, mitral endocarditis was found. The pathology in the brain—acute cell changes with the marked congestion—is attributed to the acute infectious disease from which the patient died. In the case of chronic chorea the process involved mainly the striatum (caudate and putamen) and the cortex, the changes being typical of a chronic degenerative process, selective in action. No relationship could be found between the acute and chronic varieties of chorea. The findings of epidemic encephalitis were not present in the case of Sydenham's chorea. When such are present, as in Marie's case, the authors believe them to be the result of the epidemic forms of encephalitis and not ordinary types of acute chorea.

Ventriculography in Brain Tumor—The two cases in which Bassoe and Davis made use of this method point out that in the hands of novices ventriculography is likely to be misleading and dangerous. In the first case, sufficient air had not been introduced into the posterior horn to fill the anterior horns completely. In the second case, in which the ventricles were unexpectedly small, evidently too much air was introduced and death was caused by the acute compression. Aside from determining the absence of hydrocephalus, the authors did not learn to locate the tumor any more accurately than they had by the neurologic symptoms. However, they admit that in selected cases and in skilful hands the method occasionally will lead to localization and successful removal of a tumor which cannot be located by other known methods.

Delaware State Medical Journal, Wilmington

October November December 1922 13, No 4

- Infant Eye Conditions E R Mayerberg, Wilmington—p 5
- Infant Feeding R R Spahr, Middletown—p 11
- Essential Differences Between Three Schools of Medicine—Allopathic Eclectic Homeopathic J M Scudder—p 18

Illinois Medical Journal, Oak Park

February, 1923, 43, No 2

- Ectopic Gestation Report of Cases T W Nuzum, Janesville, Wis.—p 107
- Cancer W M Harsha, Chicago—p 109
- Choriocarcinoma Following Extra uterine Pregnancy J B Moore, Benton—p 114
- Edematous Cardiopathy J M Patton, Chicago—p 117
- Surgery of Upper Abdomen Under Local Anesthesia R E Farr, Minneapolis—p 120
- *Treatment of Chronic Fatigue Intoxication E H Ochsner, Chicago—p 125
- Pernicious Anemia R D Robinson, Chicago—p 129
- Anatomy Physiology, and Diseases of Circulatory System, and Management and Treatment of Such Diseases H C Houser, Westfield—p 133
- Diabetes Mellitus R F Herndon, Springfield—p 137
- Industrial Eye Injuries F Allport, Chicago—p 145
- Thoughts on Medical Organization A F Kaeser, Highland—p 149
- Etiology and Management of Neurasthenic Conditions F R Fry, St Louis—p 151
- Thoughts on Preventive Surgery with Special Reference to Focal Infection G H Parmenter, Beecher City—p 156
- Treatment of Insane C H Anderson, Anna—p 159

Treatment of Chronic Fatigue Intoxication—Ochsner reiterates his belief that chronic fatigue intoxication is a distinct disease entity with definite symptoms. In the treatment of patients suffering from this affection, four objects must constantly be kept in mind: (1) maintain or improve the nutrition of the patient as the individual case may demand, (2) prevent the further accumulation of fatigue material, (3) ameliorate the symptoms as much as possible, and (4) remove the already accumulated fatigue material. In nearly all of the severe cases the patients suffer much from hyperchlorhydria, eructation and belching of gas, and constipation. Proper diet, rest, and looking after the symptoms as they arise, sometimes make these patients more comfortable, but these alone will never cure them. The active treatment should have for its object the elimination of all accumulated fatigue material in the shortest possible time with the least risk and discomfort to the patient. Good air, both day and night, is absolutely essential in order that the products of fatigue may be properly oxidized and converted into a form which may be easily eliminated. Suitable baths are also valuable adjuncts. In the extreme cases the use of castor oil is very important. Some of these patients can be saved only if they are given one ounce of castor oil every evening on retiring or the first thing in the morning, in order that the end results of the faulty digestion may be cleared out of the gastro-intestinal tract daily and the fatigue material which may have found its way into the gastro-intestinal tract after massage may also be removed. The measures already mentioned must be supplemented by carefully supervised, intelligent massage. When the patient is completely relieved of all of the symptoms and of all of his fatigue spots, the time for physical exercise and physical reeducation of the atrophied muscles has arrived. The exercises must be increased gradually, always stopping short of exhaustion. Later more strenuous exercise such as golf, tennis, walking, rowing are indicated and moderate fatigue encouraged, but exhaustion guarded against in order that a relapse may be averted.

Indiana State Medical Association Journal, Ft Wayne

January 1923 16, No 1

- *Sensitivity to Epidermal and Pollen Proteins Diagnosis and Treatment J A Wynn, Indianapolis—p 1
- Safe Extraperitoneal Method for Drainage of Intra abdominal Abscesses J R Eastman, Indianapolis—p 6
- Treatment of Pulmonary Tuberculosis A Henry, Indianapolis—p 9
- Arrhythmia I E Brenner, Winchester—p 14
- Ideals of Medical Profession C H Good, Huntington—p 15

Sensitivity to Epidermal and Pollen Proteins—It is pointed out by Wynn that hay-fever, certain forms of asthma, and various skin conditions are but different manifestations of the state of sensitivity to some protein or proteins. A general method is outlined for differentiating these types on the basis of clinical history and the evidence of a specific skin reaction. Special attention is directed in pollen and epidermal protein cases to the fact that they give a seasonal history in one case and a history of proximity to a given animal or fowl in the other, that both types are best treated prophylactically by removal of cause, but that desensitization

is possible and practical in case of the pollens. A method is outlined and the precautions are emphasized. Though at present desensitization must be left to those especially prepared for the work, with reasonable attention to the subject, the general practitioner should not only recognize cases of sensitivity, but classify them with considerable accuracy and accordingly give intelligent advice regarding management. The condition is common enough and important enough to warrant the attention of all engaged in the general practice of medicine.

Journal of Cancer Research, Baltimore

July 1922 7, No 3

- *Transplantable Metastasizing Chondrorhabdomyosarcoma of Rat. F D Bullock and M R Curtis New York—p 195
- *Primary Carcinoma of Liver F Helvestine Jr Charlottesville, Va—p 209

Transplantable Metastasizing Chondrorhabdomyosarcoma of Rat—The chondrorhabdomyosarcoma of the sternum of the rat described by Bullock and Curtis was a transplantable metastasizing tumor in which cross striated muscle fibers persisted through fifteen generations, although the cartilaginous elements early lost their power of differentiation.

Primary Carcinoma of Liver—A primary carcinoma of the liver in a woman, aged 63, is described by Helvestine. The patient began to lose strength and weight about two months prior to admission. About three weeks before admission her abdomen became distended and a little later she became jaundiced. On physical examination the margin of the liver could be palpated below the costal margin. A diagnosis of carcinoma of the liver was made. Three days after admission the patient died. On the basis of the arrangement of the cells, the presence of capillary stroma, and the absence of proliferation of the bile duct epithelium, this carcinoma is classed as a hepatoma. Cirrhosis was not present in the liver tissue, and nowhere was there hyperplasia of the liver cells. Although there were numerous instances in which the cancer cells grow between parallel capillaries, and were in direct continuity with the liver cell trabeculae, there were no transitions between liver cells and cancer cells. The growth was uncentric in origin, the primary focus being in the right lobe, from whence it grew by direct extension, without using the portal system as a pathway. A case of primary carcinoma of the gallbladder, with invasion and metastases in the liver is also described. Appearances very similar to those observed in the case of primary carcinoma were seen.

Journal of Immunology, Baltimore

January 1923 8, No 1

- Local and General Immunity F P Gay San Francisco—p 1
- Hereditary Blood Qualities Statistical Considerations, R Ottenberg New York—p 11
- Relation of Antigen to Antibody (Precipitin) in Vitro E L Opie St. Louis—p 19
- *Protective Action of Normal Serum in Experimental Infection with Bacillus Diphtheriae T J Mackie, Cape Town, South Africa—p 35
- Hepatic Reaction in Anaphylaxis I Vasomotor Reactions in Isolated Canine Liver W H Manwaring and S Brill Palo Alto Calif—p 47
- Relation of Antigen to Antibody (Precipitin) in Circulating Blood, E L Opie St. Louis—p 55

Protective Action of Normal Serum Against Diphtheria—In guinea-pigs experimentally infected with *Bacillus diphtheriae* normal serum (horse ox, sheep, cat, rabbit, human) injected subcutaneously at the same time as the inoculation, Mackie says, exerts a definite protective action. Two cubic centimeters of normal horse serum may protect in this way against 12 M L D (minimal lethal doses) of a *B. diphtheriae* culture. No protection occurs if the serum injection is delayed for two hours after the inoculation. The activity of the serum persists at 57 C, but is lost at 70 C and higher temperatures. The serum of one guinea-pig injected subcutaneously into another may protect the latter when experimentally infected with *B. diphtheriae* or, at least, exerts a definite delaying effect on the course of the infection. Normal horse serum is also similarly protective in guinea-pigs injected with diphtheria toxin. 10 c.c. of serum may protect against 10 M L D. The serum of one guinea-pig is not protective to another injected with diphtheria toxin. In the case

of animals surviving after protection by normal serum a marked local lesion develops at the site of inoculation.

Journal of Infectious Diseases, Chicago

January 1923 32, No 1

- *Cultivation and Isolation of Gonococci. R A Kinsella G O Broun and O Garcia St. Louis—p 1
- *Improved Methods for Isolation and Later Cultivation of *Bacillus Pertussis* O R Povitzky New York—p 8
- Existence of More Than One Immunologic Type of *Bacillus Pertussis* C Krumwiede L Mishulow and C Oldenbusch New York—p 22
- *Experimental Measles in Rabbits and Monkeys M Nevins and F R Bittman New York—p 33
- Serologic Relationships in *Streptococcus Viridans* Group Influenza Studies XL J F Norton Chicago—p 37
- *Production of Spasms of Diaphragm in Animals with *Streptococcus* from Epidemic Hiccups E C Rosenow Rochester Minn—p 41
- *Production of Spasms of Diaphragm in Animals by Living Cultures Filtrates and Dead *Streptococcus* from Epidemic Hiccups E C Rosenow Rochester Minn—p 72
- Atypical Typhoid Fever with Slowly Agglutinable Typhoid Bacillus in a Periosteal Lesion M A Blankenhorn E E Ecker and M K King Cleveland—p 95
- Influence of Carbon Dioxide on Growth of Bacteria. G E Rockwell Cincinnati—p 98

Cultivation of Gonococcus—For isolation of the gonococcus, Kinsell, Broun and Garcia found the use of a 16 per cent agar of pH 7.6 to which 30 per cent beef serum was added while the agar was still hot (from 90 to 100 C), quite satisfactory. It is important that the plates be not too moist when used. A study of various culture mediums has shown that Thallmann's agar and Vedder's starch are excellent for the cultivation of gonococcus. On semisolid 0.5 per cent agar, 5 per cent gelatin and 1 per cent nutrose, the gonococcus has grown and survived for from three to four weeks. It appears that physical factors are possibly of equal importance with nutritional factors in the cultivation of the gonococcus.

Cultivation of *Bacillus Pertussis*—It was found by Povitzky that a definitely acid reaction in a suitable medium is favorable for the isolation and growth of *Bacillus pertussis*. Such a reaction is especially valuable because it inhibits the growth of *Bacillus influenzae* and other organisms found in the sputum of patients with pertussis. The most favorable point of acidity for isolation was pH 5. The limits of acidity favorable to the growth of *B. pertussis* are pH from 6.1 to 4.4. *Bacillus pertussis* immediately after isolation grows most luxuriantly on potato-glycerol-veal agar medium unadjusted (pH from 5.8 to 6.1) with blood in the proportion of 1:3 or 1:4 added at a temperature of 45 C, but this medium is too favorable for the growth of various other organisms present in the sputum and is therefore not suitable for the isolation of *B. pertussis*. On the other hand, the Bordet-Gengou medium which contains neither meat nor peptone, is less favorable for the growth of the associated organisms of the mouth and nasopharynx. It was found, therefore, that this medium after adjustment to a suitable acid reaction (pH 5) was the best for the isolation of *B. pertussis*.

Experimental Measles—In the first series of animals used by Nevins and Bittman the virus obtained from patients with measles on the second day of the disease was passed through four rabbits and then produced symptoms typical of measles in a monkey. In the second series of animals the virus obtained as stated was passed through three rabbits and then through three monkeys in which symptoms typical of measles were produced. The monkey to monkey passage eliminated any question of a rash due to foreign protein. A control monkey injected with normal human blood showed no reaction. The results of these two series of passages confirm previous findings that the virus of measles survives rabbit passage and produces symptoms typical of measles in the monkey (*Macacus rhesus*).

***Streptococcus* in Epidemic Hiccups**—Light cases of epidemic hiccups were studied by Rosenow. From the infection atrium of each a streptococcus alike in morphology and cultural character, was isolated and with each strain spasms of the diaphragm, and other muscles were reproduced in animals. The organism was isolated from these animals and characteristic symptoms were induced on reinoculation. The streptococcus was demonstrated in the lesions and proved absent elsewhere on microscopic examination of sec-

tions These results were not obtainable with streptococci from similar sources in other diseases The possibility of an accompanying filtrable virus was excluded by the filtration experiments and by the successful reproduction of the disease after many rapidly made subcultures of the different strains The methods with which positive results were obtained included procedures in which the conditions in the patient were closely simulated The type of the disease and lesions induced were similar to those noted in the spontaneous disease in man The conclusion that epidemic hiccup is due to a streptococcus having peculiar neurotropic properties seems warranted The question of the origin and absolute specificity of this streptococcus remains to be determined

Streptococcus Filtrates Cause Hiccup—The streptococcus of epidemic hiccup has been found by Rosenow to produce a substance or complex of substances which on inoculation into animals produces spasms of the diaphragm sometimes associated with tremor and twitchings of the masseters and other muscles It is demonstrable in filtrates, in the clear centrifugized broth, and in the washed dead bacteria of young cultures at the time the living streptococcus produces like symptoms in animals, and disappears from these as the living bacterium loses this power from artificial cultivation The symptoms and lesions produced were essentially alike, except as to duration and extent, following injections of active filtrates, suspensions of dead bacteria, and the living organism Hence, the specific localizing power with the production to this highly characteristic syndrome would seem to be due to a chemical substance produced either by the streptococcus or during the reaction incited in the host

Journal of Urology, Baltimore

January 1923 9, No 1

- *Experimental Study of Various Chemicals Used in Pyelography O S Lowsley and H R Muller New York—p 1
- *Perirenal Insufflation of Oxygen Wm C Quimby Boston—p 13
- Pyelonephritis W C Stirling Jr, Winston Salem, North Carolina—p 29
- *Germicidal Character of Emanations from Colloids of Certain Silver Salts E G Ballenger and O F Elder Atlanta Ga—p 37
- Renal Torsion W F Braasch Rochester Minn—p 53
- Case of Reduplication of Left Ureter and Left Renal Pelvis R F O Neil, Boston—p 63
- Three Cases of Hydronephrosis R F O Neil, Boston—p 69
- Gonococcal Infections of Kidney J D Barney Boston—p 79
- Intravenous Injection of Neo-Arsphenamin in Treatment of Pyelitis C H Chetwood, New York—p 87

Study of Chemicals Used in Pyelography—Of all the fifteen chemicals investigated by Lowsley and Muller, sodium iodid, in 20 per cent solution, proved to be the most graphic medium It casts a deep shadow, is nontoxic, nonirritating and is easily prepared The authors caution that pyelography should be done only in selected cases Persons suffering from acute or subacute infections of the kidneys, those who are emaciated or in a weakened condition, should not be subjected to this examination The solution should be introduced carefully When the patient complains of a sense of pressure in the loins, a few drops should be released in order to avoid distention of the kidney pelvis, as experiments on animals have shown distention to cause definite damage to the renal tissue The practice of placing the patient in a sitting posture and withdrawing the catheter as the sodium iodid is injected and then immediately taking a roentgenogram was found to bring out many lesions of the ureters which would otherwise not be demonstrated

Perirenal Insufflation of Oxygen—The value of the perirenal insufflation of oxygen as a diagnostic measure is fully appreciated by Quimby, but his experience has shown that in the usual case the presence of gas about the kidney does not give plates of any greater value In the occasional case, however, when the patient is large and fat, or in those instances in which the ureter is blocked by stone, or when for any other reason it is found impossible to inject the kidney pelvis at all, a knowledge of the kidney outline, made possible by the injection of gas, is often of distinct value

Value of Colloidal Silver Chlorid as Germicide—Ballenger and Elder report further on their experimental work with colloidal silver chlorid as a germicide The preliminary

work so far done shows its harmlessness when used on inflamed surfaces and that, in certain conditions, it may be given intravenously in effective doses

Kentucky Medical Journal, Bowling Green

January 1923 21, No. 1

- Dr J N McCormack in His Relation to Medical Profession D M Griffith, Owensboro—p 9
- Dr J N McCormack in His Relation to General Public J C W Beckham, Louisville—p 11
- Dr J N McCormack as a Man J A Stucky, Lexington—p 13
- Dr J N McCormack in His Relation to American Medical Association C A L Reed, Cincinnati—p 14

Mental Hygiene, Albany, N Y

January, 1923 7, No 1

- Aspects of Annual Mechanism C S Sherrington, London—p 1
- Methods of Evaluating Our Immigrant Peoples K H Claghorn, New York—p 20
- Psychoanalysis and The School H C Miller, London—p 32
- Significance and Management of Hypochondriacal Trends in Children E L Richards Baltimore—p 43
- Study of the Underwear Industry with Special Reference to Opportunities for Subnormal Girls J D MacAlpine, New York—p 70
- Affective Factors in Vocational Maladjustment L Pruette and D Freyer, Brooklyn—p 102
- Organization and Scope of State Bureau of Mental Health W C Sandy, New York—p 118
- Nurses Training Schools in State Hospitals C F Read and M Kennedy Chicago—p 127
- Mental Health of 463 Children from Dementia Praecox Stock M M Canavan and R Clark—p 137
- Organization of Occupational Therapy in State Hospital H M Pollock, New York—p 149

Northwest Medicine, Seattle

January 1923, 22, No 1

- Modern Aspects of Etiology and Treatment of Bronchial Asthma G Piness Los Angeles Calif—p 1
- *Treatment of Pneumonia H Brooks, New York—p 10
- Treatment of Advanced Tuberculosis J E Nelson Seattle—p 17
- Adult Type Tuberculosis in Children C R Castlen Seattle—p 21
- Vomiting in Infancy and Childhood P D McCormack, Spokane—p 24
- *End to End Intestinal Anastomosis Experimental Study D V True blood Seattle—p 27

Drugs in Treatment of Pneumonia—In Brooks' opinion, as a rule, few or no drugs are required in most cases of pneumonia, with one exception he feels that the need for medication must appear before any drug is advisedly prescribed There is, however, one drug which he believes should by preference be given before it is needed This is digitalis To get the best effect from digitalis it must be given before the heart muscle is either in a state of inflammation or degenerated In the pneumonias of infants and children, he employs the drug infrequently, but as age increases, he uses it with increasing frequency and dosage As a rule, he starts with full dosage, 15 or 20 minims of the tincture every two or three hours, for the first twenty-four hours, and follows with a rapid reduction unless the case demands otherwise In cases of known cardiac defect, Brooks often digitalizes by the rapid method, 30 or 40 minims three or four times daily until digitalis effects are produced When the muscle irritability appears to be impaired, Brooks may use strychnin with the digitalis Caffem is his drug of second choice in instances of circulatory failure in pneumonia He advises against its employment in cases of active delirium and in those instances in which sleep appears to be very necessary Camphor is also a very useful drug, preferably, of course, given intramuscularly or subcutaneously Epinephrin is used especially in cases with marked hypotension, that appear to be going into shock or collapse All these drugs are employed for symptomatic reasons and few or none, except, perhaps, the digitalis, in anything like a routine manner When cough is particularly annoying or exhausting, it should be controlled, if possible, by codein heroin or morphin in the order named Brooks emphasizes the fact that the greatest danger is, over-treatment, rather than undertreatment, and that each case is an individual problem

New Method of Intestinal Anastomosis—Trueblood describes an aseptic method of anastomotic suture in which the openings are all closed by basting threads, which are withdrawn after the anastomosis has been completed

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

January 1923 27 No 8

- Barium Plaster Walls for Roentgen Ray Treatment Cubicles A E Barclay —p 234
 *Hitherto Undescribed Bone in Tarsus P D Cameron —p 234
 *Separate Center of Ossification for Tip of Internal Malleolus H A T Fairbank —p 238
 Fibrocystic Disease of Upper End of Humerus C P G Wakeley —p 241
 Simple Method of Treating Superficial Lesions of Perineum and Intra pelvic Conditions from Below M R J Hayes —p 249

Undescribed Bone in Tarsus—The bone described by Cameron formed a distinct projection on the inner side of the foot in the angle between the scaphoid and internal cuneiform bones. In the same foot there was a quite definite tibiale externum in close contact with the head of the astragalus, between the scaphoid and the sustentaculum tali. Neither of the extra bones was present in the foot of the opposite side.

Separate Center of Ossification for Tip of Internal Malleolus—Fairbank reports three cases in which there was a separate center of ossification for the tip of the internal malleolus. He suggests that it is possible that the separate ossific center has been regarded as a sesamoid bone, sometimes, perhaps, a fracture has been diagnosed.

British Journal of Ophthalmology, London

January 1923 7 No 1

- British Master of Ophthalmology Series 13 Edward Nettleship J B Lawford —p 1
 *Cases of Metastatic Carcinoma of Choroid and Iris C H Usher —p 10

February 1923 7 No 2

- Statistical Enquiry into 1000 Cases of Eye Injuries A Garrow —p 65
 Method of Recording Disc Alterations and Study of Growth of Normal and Abnormal Disc Cups R Pickard —p 81

Metastatic Carcinoma of Choroid—In one of the cases reported by Usher the primary tumor was not discovered, as permission for a necropsy was refused, and the general symptoms had not been sufficiently localizing. In the second case the primary tumor was in the breast, the eye symptoms manifesting themselves about eight months after removal of the breast. In the third case the lung was the seat of the primary tumor.

British Journal of Surgery, Bristol

January 1923 10 No 39

- Eponyms VII Percival Pott His Own Fracture D Arcy Power —p 313
 *Abnormalities of Duodenum J H Anderson —p 316
 Large Myeloid Sarcoma (Myeloma) of Radius in Which Tumor is White Throughout M J Stewart —p 322
 Cystoscopic Appearances in Tuberculosis of Urinary Tract W G Ball —p 326
 *Acromioid Embryoma Consisting of Hydrocephalic Fetal Head Contained Within Ovarian Cyst in a Child 2½ Years of Age Ovaryotomy C E Shattock —p 334
 *Studies in Gallbladder Pathology W Boyd —p 337
 Roentgenogram Prints A Suggestion A P Bertwistle —p 357
 Mayo and Crile Clinics With Special Reference to Thyroid Surgery W H Bowen —p 359
 *Method of Ligaturing First Stage of Left Subclavian Artery from Behind A K Henry —p 367
 Place of Operations for Spinal Fixation in Treatment of Pott's Disease G R Girdlestone —p 372
 Phosphorus Necrosis of Mandible H P Pickerill —p 380
 Vesalius His Delineation of Framework of Human Body in Fabrica and Epitome W G Spencer —p 383
 Effect of Gastro-Enterostomy on Gastric Function as Interpreted by Fractional Test Meal E F Guy —p 403
 Congenital Cyst of Common Bile Duct Report of Two Cases J Morley —p 413
 Acute Hemorrhagic Pancreatitis Ascaris Lumbricoides in Pancreatic Duct H M Rigby —p 419
 Partial Obstruction of Pancreatic Duct by Round Worms Novis —p 421
 Intestinal Obstruction from Hydronephrosis in Pelvic Kidney H T Mursell —p 421
 Pelvic Hematocoele in Male Unnoticed Until Infected from Intestine W G Spencer —p 423
 Endothelioma of Left Kidney Extending Down Ureter and Projecting into Bladder Removal Death Four Months Later W G Spencer —p 423

- Large Intraperitoneal (Parovarian) Cyst Disappearing After Drainage. W G Spencer —p 424
 Two Cases of Ruptured Sigmoid Colon R. M. Handfield Jones —p 425

Abnormalities of Duodenum—It is Anderson's belief that gross anatomic abnormalities of the duodenum are more frequent than is generally supposed, and such abnormalities may exist without producing any clinical evidence of their presence.

Myeloid Sarcoma of Radius—A case of myeloid sarcoma of the lower end of the radius is reported by Stewart in which the tumor, measuring 2½ by 1½ inches, was white throughout. The patient was aged 6 years, and the swelling had first been noticed three years before. As the tumor had burst through its bony capsule over a large area and was extensively invading the soft tissues, treatment by amputation was decided on, and carried out. Histologically, the growth was a typical myeloid sarcoma (myeloma). The axillary glands on the affected side were enlarged, but had completely subsided by the time the patient was discharged from hospital.

Acromioid Embryoma—Shattock removed a diseased ovary from a child aged 2½ years who had suffered from indefinite abdominal symptoms for six weeks. The left ovary was enlarged by the growth of an embryoma which was composed solely of the head of a hydrocephalic fetus and completely filled a cyst in the ovary. The soft easily separable hydrocephalic brain measured 5.5 by 3 cm in chief diameters, and was lined with ependyma through which the subjacent vessels were visible. Below the middle of the distended brain there was an elongated piece of cancellous bone closed in with a layer of compact bone, which may be taken as the basis cranii. Below the bone, and extending behind it as far as the skin and beneath the brain, there was a triangular mass of young connective tissue and fat in which microscopic examination demonstrated also the presence of a few islets of cartilage and a compact ill defined mass of well developed intersecting bundles of unstriated muscle fibers. There were also included groups of ganglions furnished with large typical nerve cells. The skin over the triangular mass of connective tissue already referred to was thickly covered with somewhat stiff dark hair embedded in sebum.

Gallbladder Absorbs Cholesterol—The study made by Boyd of the gallbladder with the binocular dissecting microscope revealed a new view of the anatomy of the organ and throws suggestive light on the question of its function. That function, Boyd says is undoubtedly one of absorption and it is possible that one of the chief substances absorbed is the cholesterol of the bile. The formation of deposits of cholesterol ester in the mucosa of the gallbladder is an important feature in many cases of early cholecystitis. These deposits occur both in the surface epithelium in the connective tissue stroma, and possibly in the lymphatics. In some cases, at least the first step in the development of gallstones may consist in this formation of cholesterol deposits. A new microchemical test for cholesterol in the tissues is described.

Ligaturing Left Subclavian Artery—An approach to the first stage of the subclavian artery is obtained by Henry by costo-transversectomy at the level of the second rib on the left side. Depression of the pleural dome leaves the artery naked from the aorta to the first rib, no structure (excepting the ansa subclavia) intervening between the operator and the vessel. The first stage of the vessel can be ligatured in any part of its course and its branches except the thyrocervical trunk, can be tied with relative ease.

Bristol Medico-Chirurgical Journal

January 1923 10 No 14

- Debt of Medicine to the Fine Arts J A Nixon —p 1
 Principles of Surgical Treatment of Infections of Peritoneum. F Fraser —p 29
 Acquired Resistance to Tuberculosis A Factor in Clinical Type and Prognosis S L Cummins —p 41

China Medical Journal, Shanghai

January 1923 3 No 1

- *Use of Plaster Pylon in Leg Amputations. G Van Gorder —p 1
 *Pneumonic Plague in Harbin (Manchurian Epidemic 1921) J A H Chan —p 7

- Congenital Occlusions of Alimentary Tract Case Reports E D Smith—p 18
 Practical Method for Delousing Chinese Clothes and Bedding S D Joffick—p 25
 Chin's As Field for Study of Nutrition of Human Teeth J T McClelland—p 34
 Necrosis of Jaw P L McAlh—p 39
 Chronic Erythema Nodosum Report of Case W W Cadbury—p 41
 Preparation of Surgical Solution of Chlorinated Soda J Cameron—p 44

Use of Plaster Pylon in Leg Amputations—Because of the high incidence of joint tuberculosis, gangrene, and severe infections among Chinese patients, many amputations are necessary. The absence of artificial limb factories in China, and the great expense associated with importing appliances from Europe and America, have made the surgical after-treatment of patients with amputated limbs a difficult problem. In order to improve the condition of leg "amputee" cases, Van Gorder says some form of prosthesis should be given to every such patient before he or she is discharged from the hospital. The form of prosthesis recommended by Van Gorder for routine use in the hospital is the so-called "plaster pylon." This form of apparatus is quickly and easily made, the necessary materials are readily available, it is inexpensive, and at the same time effective.

Pneumonic Plague in Harbin—Chun reviews some features of the epidemic of plague which existed in Harbin in 1921. The death rate was 10 per thousand as contrasted with 90 per thousand in the 1910 epidemic. The scheme of management and the clinical analysis of the cases are detailed. With regard to treatment, nothing was of avail.

Edinburgh Medical Journal

January 1923 30, No 1

- Progress of Medicine and Retarding Influence of Credulity E Bramwell—p 1
 *Importance and Function of Teres Minor Muscle D M Greig—p 16

Importance and Function of Teres Minor Muscle—Greig advances the ideas that the teres minor is not a muscle of lateral rotation that lateral rotation is caused mainly by the infraspinatus, and that the function of the teres minor is to steady the head of the humerus in the glenoid during contraction of the deltoid.

Journal of Laryngology and Otology, Edinburgh

February 1923 38, No 2

- Angioma of Larynx I Moore—p 57
 Pathologic Effects of Excessive Sounds on Cochlear Apparatus Considered in Relation to Theories of Sound Perception T R Rodger—p 66
 Temporoparietal Abscess Two Cases F Muecke—p 72
 Unusual Termination (Peritonitis) of Case of Temporoparietal Abscess F G Wrigley—p 76
 Two Cases of Fatal Osteomyelitis of Frontal Bone H Tilley—p 78

Journal of State Medicine, London

January 1923 31, No 1

- Prenatal Hygiene and Problems of Maternity and Child Welfare W M Feldman—p 3
 Water Supplies with Reference to Those in Gallipoli Campaign A Gaskell—p 15
 Milk Problem H Scurfield—p 28

February 1923 31, No 2

- Specific and Nonspecific Formation of Antibodies T Madsen—p 51
 Prevention of Tuberculosis by Injecting Tubercle Bacillus Antigen W M Crofton—p 74
 Treatment of Pyorrhea by Violet Ray Concentration (Pashler Lamp) R Hodgson—p 79
 *Problem of Syphilitic Child M Rorke—p 82

Problem of Syphilitic Child—Rorke urges that given a family history of syphilis the mother should be treated during each pregnancy and the child when born be instantly put on treatment. She is convinced that short of absolute idiocy or marked mental defect a quite considerable proportion of "difficult" and very naughty children are congenital syphilitics. These children are really feeble-minded to some extent—at any rate they are mentally subnormal though perhaps not certifiable. These are the people who when grown crowd workhouses and prisons—the men unfit to keep a job at a living wage and so inclined to theft and other crimes—the girls frequently immoral mothers of illegitimate children and members of the pathetic crowd of prostitutes.

Archives des Maladies de l'Appareil Digestif, Paris

November 1922 12, No 6

- *Roentgenography of Bile Passages Duval et al—p 377

Roentgenography of Bile Passages—Duval, Gatellier and Beclere remark that the technic of roentgenography has improved so much that the results of their years of concerted study of the bile ducts, with and without gallstones, by internist, surgeon and roentgenologist may soon be surpassed. They state that Chappuis and Chauvel seem to have been the first who examined with the roentgen rays for gallstones. This was in 1896, but Carl Beck of New York was the first to show a gallstone in the gallbladder in 1899. The first unmistakable roentgenogram of a calculus in the common bile duct was secured by H. Beclere in 1919. Their long article is accompanied by eighty-six roentgenograms and explanatory diagrams. They insist that the roentgenologist should get with the patient a detailed clinical record of his pathologic past and the diagnosis that has been made. The radiologist should know whether the assumed gallstones are causing manifestations in the gallbladder or in the stomach and duodenum, whether the lithiasis is aseptic, whether the cholesterol content of the blood is normal, and whether the concretion is possibly or probably in the main bile duct. The gallstones may cast a shadow in one test and not in another, as the adjacent organs happen to contain more or less gaseous or solid contents. The findings are instructive only in about 60 per cent of the cases at best.

Bulletin de l'Academie de Medecine, Paris

Jan 9 1923 89, No 2

- *Medical Examination of Chauffeurs—p 47
 *Incontinence Due to Spina Bifida P Delbet and A Leri—p 49
 *Diabetes and Syphilis M Labbe—p 53
 *Cholesterinemia in Diabetes Remond and Rouzaud—p 60
 *Vitamins and Cereal Decoctions M Springer—p 61

Report on Medical Examination of Chauffeurs—The academy adopted the resolution of a committee composed of Quenu Tuffier, Vaquez and Fiessinger, recommending the following measures with regard to issuing licenses to persons driving automobiles: (1) The chauffeur must be without exception 20 years old. (2) No license is to be granted to persons with mental disturbances, organic lesions of the heart, vessels or nervous system. Sight and hearing must be examined by a special medical commission. Special rules must be published concerning the degree of the lesions which would make driving inadvisable. (3) Mutilated persons may drive if really able to do so with their prosthesis. (4) The driver must be reexamined after ten years or, in special cases, in three years. (5) The license should be revoked for intoxication especially if repeated. (6) Every driver who causes an accident must be reexamined immediately.

Incontinence of Urine Due to Spina Bifida—Delbet and Leri report a case of enuresis with occult spina bifida. They removed a transverse fibrocartilaginous band which compressed the cauda equina, and the patient recovered. The sacral region should be examined by roentgen rays in every case of persistent incontinence of urine. If a spina bifida is found an operative exploration reaching as deep as the dura mater should be performed.

Diabetes and Syphilis—Labbe finds that syphilitic diabetes is extremely rare. The coincidence of diabetes and syphilis is no more frequent than syphilis with other diseases or perhaps even in the otherwise healthy. He reviews the usual reasons which would seem to speak for a syphilitic etiology, and finds only one case in the literature in which antisyphilitic treatment certainly cured the diabetes. In his own experience this treatment was without favorable results in seven cases of diabetes with a history of inherited or acquired syphilis.

Prognostic Value of Cholesterinemia in Diabetes—Remond and Rouzaud found among 189 cases of diabetes, fourteen with cholesterinemia of 3.12 to 8.28 gm per liter. Only one of these patients survived two years after this finding. The others died much earlier.

Vitamins and Cereal Decoctions—Springer points out that the new researches on vitamins explain his excellent experimental and therapeutic results with decoctions of cereals in 1894. The experiments concerned their action on the growth

of dogs, and the clinical work was done on wetnurses, babies, and patients with typhoid and tuberculosis. In explaining the results he had pointed correctly to the low nutritive value of the decoctions and ascribed the action to ferments which favored the production and utilization of intra-organic energy.

Journal de Medecine de Bordeaux

Dec 25 1922 94 No 24

- *Toxemia in Pregnancy and Antianaphylaxis L. Charron—p 787
- Chaulmoogra in Treatment of Tuberculosis F. Leuret—p 789
- Fight Against Infant Mortality Rousseau Saint Philippe—p 790

Toxemia in Pregnancy and Antianaphylaxis—Charron relates that a woman had had three pregnancies from three different husbands. Intense toxemia developed at the third pregnancy, and Charron injected the husband's serum on the assumption that, if the intoxication was due to an antigen from the male, the progressive introduction of this antigen would desensitize. Vomiting ceased at once the pulse dropped from 108 to 80 and the arterial pressure and weight increased. The woman has been in good health since and Charron expects that her pregnancy will follow its course without incident. He asks in conclusion whether the pregnancy toxins may not be merely toxic proteins from the male. The capricious character of the reaction phenomena could be explained by variations either in the quality of the graft or in the respective relations between the two subjects. In the case described there had been severe toxemia at the woman's second pregnancy, with her second husband, but not so intense as at this third pregnancy with her third husband.

Jan 10 1923 95, No 1

- *Medicine in 1870 and Today A. Arnozan—p 7
- Extra Wide Compression Forceps F. Papin—p 18

Medicine in 1870 and Today—Arnozan's farewell address at the Faculté de Bordeaux was summarized in the Paris Letter, Feb 24, p 566.

Paris Medical

Jan 6 1923 12 No 1

- Tuberculosis in 1923 P. Lereboullet and L. Petit—p 1
- *Nontuberculous Pleurisy in the Tuberculous E. Sergent and Durand—p 14
- *Tuberculosis in Nurslings P. Nobecourt and J. Paraf—p 18
- *Tuberculosis and Pregnancy L. Bernard—p 22
- Control of Treatment of Tuberculosis A. Gauscel—p 27
- *Phlebitis in Incipient Pulmonary Tuberculosis Lafforgue—p 30

Nontuberculous Interlobar Pleurisy in the Tuberculous—Sergent and Durand point out that the fissure between the lobes is of distinct pathologic importance in tuberculosis of the lungs. Three sorts of syndromes can be observed: affections located in the fissure (interlobar pleurisy), affections practically restricted to the parenchyma adjoining the fissure and lobar syndromes where the fissure serves as a barrier. They describe the purulent (nontuberculous) interlobar pleurisy which may occur in the tuberculous just as in otherwise healthy subjects. Since this origin is of special prognostic importance they publish two observations. The roentgen-ray examination gives the typical picture of a localized pyopneumothorax. Contrary to such a condition in nontuberculous patients it is usually limited by previous inflammations to a smaller part of the fissure but differs from a large tuberculous cavity by the mobility of the level of its liquid content and its sudden appearance in a place where there were no signs before. The dark line starting from the cavity in the direction of the interlobar fissure is also a diagnostic point. The sudden appearance of large numbers of pneumococci or streptococci when the abscess perforates and their disappearance when the purely purulent expectoration stops, are signs which speak for a nontuberculous origin. Recovery is usually prompt. Artificial pneumothorax may be necessary.

Tuberculosis in Infants—Nobecourt and Paraf found among 1,296 infants 46 per cent with tuberculosis. They believe that a systematic application of biologic tests would reveal many overlooked cases. Fever or respiratory phenomena need not be present but all cases were more or less hypotrophic. Distinction of dyspeptic anemic and rachitic forms of tuberculosis is not warranted; these are simply coincidences. The enlargement of supraclavicular lymphatic glands

to the size of a pea or hazelnut is important but not constant. Of all the biologic reactions a positive tuberculin skin reaction is most important and reliable unless the infants are anergic or anteallergic (between infection and the time of appearance of antibodies). Clinical diagnosis would in most of the cases be impossible.

Tuberculosis and Pregnancy—Bernard's views have already been summarized, p 512.

Rules for Experimentation and Control of New Measures in Treatment of Tuberculosis—Gauscel gives a skeptical paper on the value of therapeutic observations in tuberculosis. A new sort of treatment is instituted. The physician begins it without waiting for the usual good influence of rest and treatment to become manifest. He reports the wonderful results as due to the remedy applied and forgets to rectify his report when the patient dies a little later. Many of the best results are obtained in patients who were not tuberculous at all. He proposes the following rules for therapeutic experiment: (1) The new treatment must not start with the arrival of the patient in the hospital. He should first be carefully observed (including roentgen ray examination) for a long period under the ordinary general treatment. (2) There should be three groups of patients: one taking the treatment one without any treatment and a third control group in which the patients are given to believe that they are receiving the same treatment that is being tried on the main group. (3) The treatment must be continued for a long period and the eventual improvement must not be reported until at least several months later.

Phlebitis in Incipient Pulmonary Tuberculosis—Lafforgue deals with the rare cases of phlebitis which occur in the early stages of tuberculosis—so early that some of them have been erroneously called pretuberculous. Many cases of supposed chlorotic phlebitis belong to this group and careful examination may reveal the minor signs of tuberculosis although not in every case. The affection is usually localized in a superficial vein of the leg and rarely progresses into the femoral vein. Embolism is rare. The cardinal signs are pain which may be preceded by paresthesia, edema which in some degree is always present and differentiates the condition from myalgia and neuritis and the palpable and painful inflamed vein. The functional disturbance is small; the sensibility intact and trophic and vasomotor disturbances are absent. Rest in bed for two or three weeks leads to complete local recovery. Some cases may be due to associated infection but in some the direct tuberculous etiology is proved or is very probable because of the doubtful outcome. Local trauma and congenital debility of veins are accessory factors. It seems also that some strains of bacilli are more liable to cause bacillæmia. The diagnosis is difficult between chlorotic thrombosis (examination of blood) and a similar syphilitic affection. Although the immediate prognosis is good these cases have to be considered with great caution as to the ultimate outcome of the tuberculosis. One third of the cases which could be kept under observation developed military tuberculosis within two years (sometimes in a few months). In other cases the original tuberculous lesions ran a progressively more serious course.

Presse Medicale, Paris

Jan 6 1923 21 No 2

- Warning Hypertension in Toxemia of Pregnancy A. Le Lorier—p 13
- *Rapid and Profuse Menopausal P. Sabouraud—p 14
- Hydrocephalus and Its Treatment C. Lenormant—p 18

Warning Hypertension in Toxemia of Pregnancy—Le Lorier measured the blood pressure as a routine in pregnant women and found it a most valuable aid in preventing toxemia. A pressure of 120 mm mercury is the warning line. If a pressure which was below this starts to rise other symptoms of toxemia may be expected soon if the patient remains without rest and dieting. At 150 mm mercury albumin appears in the urine and eclampsia is imminent. Two cases illustrate this course. Since toxemia can usually be prevented by rest and a milk vegetable salt free diet it is important to look for this early sign. Methods are given to measure the blood pressure.

The Differential Diagnosis in Cases of Rapid and Profuse Alopecia—Sabouraud describes cases of profuse alopecia, among them the case of a girl, aged 13, who lost her hair thirteen days after being raped. The hair grew again Alopecia following roentgen rays and ingestion of thallium occurs also in about fourteen days, while hair killed during an infection (typhoid, etc.) keeps in place for seventy-five days.

Hydrocephalus and Its Treatment—Lenormant describes the history of surgical treatment of hydrocephalus, and deals especially with Dandy's investigations.

Jan 10 1923 31, No 3

*Cancer of the Tongue R Proust and A Maurer—p 25

*Hemoclastic Crisis in Drug Addicts P Sollier and D Morat—p 28

Treatment of Cancer of the Tongue—Proust and Maurer combine ligation of arteries, extirpation of lymphatic glands and treatment by radium and roentgen rays. They describe the technic, with illustrations.

Hemoclastic Crisis in Drug Addicts—Sollier and Morat found in a morphin and a heroin addict Vidal's hemoclastic test positive. The test remains positive for from twenty to thirty days after stopping the drug, and the negative result is a good indication of recovery. Drug addicts have a hemoclastic crisis after injection of even a small dose of the drug. Therefore a very small injection relieves the severe symptoms after starting treatment, but the drug should never be used later for any reason whatever. Hypnotics cause the same crisis as milk or morphin, and should not be used in drug addicts.

Jan 13 1923 31, No 4

*Respiratory Paralysis of the Larynx Lermoyez and Ramadier—p 33

*Regional Anesthesia of Uterus G Cotte—p 36

*Milk Injections and Vaccine Therapy in Gonorrhea Tansard—p 37

Present Status of Physostigmin as a Heart Tonic L Cheimisse—p 39

Paralysis of Dilators of Larynx—Lermoyez and Ramadier believe that syphilis is the cause of symmetric paresis of the dilators of the larynx—a rule for which they admit very few exceptions. The affection is characterized clinically by a permanent inspiratory dyspnea, with attacks of suffocation which may terminate the life of the patient. The voice is clear. Laryngoscopy reveals the vocal cords in a fixed position near the middle line, leaving only a space of from 1 to 2 mm between. Inspiration aspirates the cords and makes the passage still narrower. Among six cases, in only one, in which no spinal puncture was allowed, was it not proved to be due to syphilis. This clears up the frequent coincidence with Argyll Robertson pupil and aortic insufficiency. While unilateral paresis of the recurrent nerve is usually caused mechanically by dilatation of the aorta, and may be a very valuable sign of aneurysm, bilateral paralysis is simply a parallel affection ("sister, not daughter"), and the usual forced explanations are superfluous. The probable site of the disease is in the medulla oblongata. The syphilitic etiology gives at least a possibility of treatment. This must be prompt and vigorous starting with mercury and then following with arsphenamin preparations. Iodids should not be used because they may cause cough. No time should be lost in trying to perfect the diagnosis. The patient who comes with a disturbance which he considers as a simple cold may be suffocated a few hours later. If treatment is started very early, tracheotomy, which so far has been the only relief, will not be needed so often.

Regional Anesthesia of Uterus—Cotte anesthetized the uterus by injections into the base of the broad ligaments. Others have already used this method for anesthesia of the vagina and perineum.

Milk Injections and Vaccine Therapy in Gonorrhea—Tansard injected from 2 to 5 cc of milk intramuscularly every other day. The treatment had no effect in acute gonorrhea, but proved very beneficial in all the other manifestations especially epididymitis and cystitis (ten to twenty injections). When the results were not perfect he completed treatment with vaccines.

Jan 31 1923 31 No 9

*The Jenner Centennial—p 97

The Jenner Centennial—The *Press* reproduces the addresses delivered at the Académie de médecine by Achard

and Camus. It also gives the facsimile of a letter written by Jenner to congratulate the French for their energy in introducing vaccination into France.

Progrès Médical, Paris

Jan 13 1923 38, No 2

*Alimentary Leukocyte Influx into Stomach Loeper and Marchal—p 13

*Differential Diagnosis of Cephalaria Avierinos and Bourde—p 13

Cold Abscess in Chest Wall A Broca—p 18

Alimentary Leukocyte Influx into Stomach—Loeper and Marchal state that the leukocyte influx into the stomach after ingestion of bouillon is a physiologic reaction. The leukocyte influx reaches higher than 1,000 leukocytes to 1 cmm. The reaction is autonomous and is independent of other reactions. In hyperchlorhydria, polymorphonuclears predominate, while in hypochlorhydria lymphocytes are abundant and often outnumber the polymorphonuclears. This is pronounced in chronic gastritis and cancer. They will publish later the diagnostic value of these variations.

Diagnosis of Cephalaria—Avierinos and Bourde discuss the diagnosis of cephalaria, based on Loeper's study of the subject. They state that its knowledge will be useful to surgeons as it will prevent many unnecessary laparotomies.

Revue Pratique des Maladies des Pays Chauds, Paris

October 1922 1, No 1

Introduction to Study of Tropical Diseases G Reynaud—p 1

*Treatment of Amebiasis P Ravaut—p 8

Progress in Treatment of Protozoan Diseases L Tanon—p 18

*Gnats in Human Pathology Neveu Lemaire—p 25

*Prophylaxis of Skin Cancer H Gougerot—p 34

Syphilis and Pregnancy C Jeannin—p 53

*Germ Carriers in Tropical Pathology L Nattin Larrier—p 57

*Medicine in Egypt M Zeitoun—p 72 Cont d

The Tropical Diseases Review—This new journal bears the subtitle "Medicosurgical Egypt." One of the three editors resides at Cairo, one at Morbihan, and one at Paris. The subscription is 75 francs per volume. The editors appeal to physicians in tropical countries to send descriptions of their researches and observations. Address Dr M Zeitoun, 32 rue de Gay-Lussac, Paris, France.

Treatment of Amebiasis—Ravaut describes what he calls the two modes of attack, emetin and arsenicals by injection, and charcoal by the mouth. He emphasizes the necessity for keeping up treatment long after the patient has been apparently cured. As a general thing, he advocates giving the emetin and arsenical both subcutaneously and by the vein in the acute phases, but by mouth and in enemas when the disease has become chronic. For this, he orders a charcoal compound 100 gm each of vegetable charcoal, bismuth subnitrate, simple syrup and glycerin, with 4 gm of pulverized ipecac. This represents about 0.05 gm of the ipecac powder and 1.25 gm of bismuth in each teaspoonful. From 3 to 12 teaspoonfuls of this mixture are taken during the day, at mealtime, every second day for twenty days. On alternate days a tablet of 0.10 gm of neo-arsphenamin is taken instead. From 0.15 to 0.30 gm of the same arsenical, dissolved in 60 cc of boiled water, with or without laudanum, is injected into the rectum on retiring, to be retained all night. Substantial food is imperative and is usually well assimilated, with the exception of eggs, milk and uncooked articles. By changing thus the mode of administration from time to time, and keeping up treatment long enough, a complete cure was always finally realized in his experience.

Gnats in Human Pathology—Three-day fever and Oriental sore can be transmitted by gnat bites, this is probable also with external leishmaniasis, and possible for Peruvian verruca.

Precancer Conditions—Gougerot insists on the relative frequency of abortive and rudimentary forms of xeroderma pigmentosum, and reiterates that it is extremely liable to develop into cancer. The pronounced forms are rare. Rouviere in 1922 could find only 192 cases on record. Gougerot however, has encountered a number of cases in the last fifteen years. Sailors, farmers and roentgenologists are subject to epitheliomatosis which closely resembles typical xeroderma pigmentosum, and the analogy is also striking with senile keratosis on regions exposed to the light.

Gougerot regards the action of sunlight as an important factor in the development of skin cancer. All these affections, he declares, represent merely different phases of this "cancer-breeding radiolucitis." The intensity is determined by the sensitiveness of the skin. Much can be done in prevention. This should include treatment of inherited syphilis organotherapy as indicated, and protection against sunlight and roentgen rays. A broad brimmed hat, a veil and colored salves (an absorbent quinin salve or calcium fluorid cream) should be used. The preepitheliomatous lesions in the skin must be systematically destroyed. Radiotherapy is preferable for diffuse epitheliomatous infiltration, but not for warty growths. Pigmented spots should be treated only with electrolysis. Even the gravest cases may be kept under control in infants, children, adults and the senile, by periodical surveillance and prompt treatment. To keep these *radiolucites cancéreuses* under control and prevent their development is the most effectual field for prophylaxis and cure of cancer.

Bacilli Carriers in Tropical Pathology—Nattan-Larrier comments on the way in which during the World War diphtheria, cerebrospinal meningitis and bacillary dysentery disappeared from the barracks and camps under the vigorous measures applied to seek out and sterilize the chronic carriers. This method of prophylaxis is soon to be applied to sleeping sickness throughout the whole extent of French equatorial Africa. The recent report of Major Jamot of the medical corps covers an area of 100,000 square kilometers. In two years he has examined 89,743 natives, less than 11,000 escaping examination. He was assisted only by two European nurses and ten natives. The death rate has declined 65 per cent, and the blood was found sterile in 598 of the 753 given systematic atoxyl treatment. The mass of the virus in circulation has thus been reduced 80 per cent.

Medicine in Egypt—Zeitoun describes the foundation of a medical school at Cairo in 1827. Dr. Clot, a French physician, was its initiator under Mehemet Ali, and 1,500 natives were trained in the school. Ninety of the French medical works of the day were translated into Arabic. Bilharz was one of the professors. Clot founded a military hospital, botanical garden and library, in 1827 he inaugurated a course in anatomy, and performed the first necropsy, Zeitoun says, at any point in the Orient in any epoch.

Schweizerische medizinische Wochenschrift, Basel

Jan 4 1923 53, No 1

- *General Neuroses H. Sahli—p 1
- *Goiters and Their Action on the Blood F. de Quervain—p 10
- *Obstetric Shock Muret—p 14
- Sterilizing of Dressings W. Silber Schmidt—p 17

General Neuroses—Sahli tries to localize hysteric and neurasthenic symptoms in the brain, and to use the energy standpoint in their differentiation.

Goiters and Their Action on the Blood—De Quervain with Hara and Branovacky experimented on rats with the serum and thyroid tissue from 119 different cases of goiter. He used the Asher-Streuli-Duran test of the sensitiveness of hyperthyroid rats to lack of oxygen. Normal serum and the serum of cretins had no influence (in some cases the latter increased the resistance), while exophthalmic goiter acted very strongly. The thyroid acted in a similar way, and it was interesting to note that even the thyroid from cretins was not without influence. Serum from cretins to a certain extent neutralized exophthalmic goiter serum. De Quervain believes that the thyroid secretes several substances. These tests seem to prove the presence of one of them in the serum of patients.

Obstetric Shock—Muret describes a case of shock after delivery. The condition much resembles a large hemorrhage but it can occur without excessive hemorrhage.

Riforma Medica, Naples

Jan 1 1923 30 No 1

- Domenico Cotugno 1736-1822 L. Bianchi—p 1
- Intestinal Putrefaction in Tuberculosis V. Casati—p 4
- Epidemic Meningitis A. Della Cioppa—p 7
- Conservation of Iso-Agglutination Property of Erythrocytes—p 10

- Mechanism of Wassermann Reaction P. Rondani—p 11
- Recent Literature on Cardioresenal Syndromes A. Jappelli—p 13

Intestinal Putrefaction in Tuberculosis—Cassini studied the elimination of indican and combined sulphuric acid in tuberculous patients. He considers both substances important indications of intestinal putrefaction. The purulent pulmonary process and the increased decomposition of body proteins may contribute to the elimination of these substances. The increase in sulphuric esters in the advanced stage is greater than the increase in total sulphuric acid or sulphur. The elimination of neutral sulphur varies in these patients.

Epidemic Meningitis—Della Cioppa emphasizes the importance of adenoids as germ carriers. They can be freed from meningococci by applications of a 3 to 5 per cent solution of iodine in glycerin, or by inhalations of iodine fumes through the nose.

Semana Medica, Buenos Aires

Dec 21 1922 2 No 51

- *Prophylaxis of Puerperal Infection Ubaldo Fernandez—p 1265
- *Pneumococcus Infection in Infants A. Casaubon—p 1268
- Welfare Work for Infants F. Schweizer—p 1283
- Vaginal Access to Hydatid Cysts in Pelvis A. Chucuo—p 1288
- *Congenital Dystrophy of Fibro-Elastic Tissue J. M. Macera—p 1291
- Obstetrics and Gynecology from Industrial Standpoint J. B. Gonzalez—p 1294
- The Chlorophyll Function in Plasmogenesis A. L. Herrera—p 1319

Prophylaxis of Puerperal Infection—Ubaldo Fernandez insists that in obstetrics the danger is from without, all the favorable elements are in the parturient herself. He describes how the application of this principle at the Alvear Hospital has given a morbidity in ten years of only 1 per cent of women entering the hospital before the onset of labor, 38 per cent after labor has begun. The average for the two groups is 2 per cent. The mortality has been 0.09 and 0.35, with an average for the two groups of 0.18 per cent.

Pneumococcus Infection in Young Children—Casaubon gives an exhaustive summary of the present status of knowledge on this subject. He reports the details of six cases of purulent pleurisy with pneumonia in infants from 9 to 30 months old all recovering under treatment by repeated puncture and aspiration of the pus. The total thus evacuated ranged from 20 to 780 gm. A 5 per cent solution of methylene blue was injected. The infants were kept under the closest supervision ready to call in the surgeon any moment, but all recovered without this in from nine to fifty-five days. In cases of pneumococcus sepsis blood can be obtained for examination from the veins in the neck or longitudinal sinus. These are also available routes for injecting the antiserum. Injection directly into the focus is a useful adjuvant. The lung excepted local injection is dangerous in the lung. The great tendency in young children for pneumococcus meningitis to become partitioned off, justifies injection of the antiserum into the ventricles as well as intraspinally.

Dystrophy of Fibro-Elastic Tissue—Macera ascribes to this general cause the congenital huge inguinal and umbilical hernia and pneumocele in a male infant. The apex of the lung on each side extends to the junction of the lower and middle thirds of the neck. The sternoclavicular ligaments are so small and loose that there is habitual subluxation of this joint. The father is 48 years of age, the mother 46 and there is nothing to suggest syphilis in the family but another child has an inguinal hernia.

Siglo Medico, Madrid

Dec 23 1922 70 No 3602

- *The Oldest Known Case of Addison's Disease G. Marañon—p 605
- The Bacteriologic Work of Pasteur R. Turró—p 606
- Ultraviolet Rays in Treatment of Rickets J. and V. Garcia Delato—p 610
- Syndromes of the Centrum Ovale C. Juarro—p 614

The Oldest Known Case of Addison's Disease—Marañon reproduces the description by a priest in the sixteenth century of the sickness of a young priest who died three years after the first symptoms. They developed after a fright, the building was struck by lightning and burned. The description portrays Addison's disease perfectly but the pigmentation was ascribed to smoke getting into the system. The first description cites modern instances of an

emotional origin One of his patients developed the disease after seeing his child killed by a street car

Dec 30 1922 70 No 3603

Epileptic Equivalents of Oniric Impulsive Type A Fernandez Victorio —p 633

*Strangulated Scrotal Hernia Ramiro Arroyo —p 635

Gastro Intestinal Disturbances in Children F Garcia Martinez —p 636 Cont n

Medicolegal Study of Abdominal Wounds J Parra Eytiar —p 641

Jan 20 1923 71, No 3606

Tabes with Few Symptoms J M de Villaverde —p 49

Pathogenesis of Cholelithiasis C Blanco Soler —p 53 Cont d

Strangulated Scrotal Hernia—The hernia occurred suddenly while the man was lifting a heavy weight It was of the peritoneum-vaginalis type, without any hernial sac, and it became strangulated at once The quantity of fluid in the peritoneum and vaginalis suggested that there had been some cyst formation, the rupture of which had suddenly entailed the hernia

Deutsches Archiv für klinische Medizin, Leipzig

Nov 21 1922 141, No 12

*Renal Hypertrophy of the Heart L Braun —p 1

*Encephalography E Schott and J Eitel —p 16

*Polycythemia Rubra K Gutzeit —p 30

*Pressure in Pleural Cavity G Ganter —p 68

*Action of Endocrines on Serum Calcium H Leicher —p 85

Improved Method of Oscillography S Hediger —p 117

The Kidney Factor in High Blood Pressure—Braun considers experimental hydronephrosis as one of the best methods to induce hypertrophy of the heart He mentions three necropsies which he considers instructive instances of this He reviews the mechanism of this process, and believes that the origin of the vascular changes in renal sclerosis is also down stream from the glomeruli, in the secreting tissue of the kidneys The circulation influences the secretion, but the secretion of urine can cause changes in the blood circulation

Encephalography—Schott and Eitel publish the results of their investigations on an anatomic model, on cadavers, and persons with and without brain lesions After they found in one case that the insufflated air remained for twelve days in the ventricles of the brain, they used oxygen which is resorbed much quicker Yet the other very disagreeable symptoms remained, and were so severe that they advise limiting such investigations to cadavers The diagnostic results are too insignificant in comparison with the disturbances caused by the method.

Polycythemia Rubra—Gutzeit publishes clinical histories of five idiopathic cases and adds four others in which the polycythemia was due to other diseases Some of his cases developed after infections, although the history pointed toward a previous latent polycythemia The young son of one patient suffers from lymphatic leukemia Investigations among the members of such families reveal sometimes latent polycythemia, although such persons may look rather "anemic" Two cases had a very protracted coagulation time, due to diminution of fibrinogen and thrombokinas Several cases had a lowered osmotic resistance and a low nitrogen content in the erythrocytes In one case which presented hypertension and normal spleen at first the blood pressure later became normal but the spleen was enlarged Thus a polycythemia of the Gaisbock type changed into the Vaquez type, showing that probably neither of the distinguishing signs is essential

Pressure in Pleural Cavity and Its Influence on Site and Shape of Exudates—Ganter studied on a model and on patients the pressure within the pleural cavity, and proved that it differs in different parts of the pleura This is due to the fact that the elasticity of the lungs is not uniform These differences in pressure account for the well known parabolic upper limit of exudates they cannot follow merely their gravity and do not change their level quickly If the tension of the lungs is put out of play by pneumothorax or in a smaller degree by loss of elasticity (emphysema), free fluid in the cavity has a horizontal level The lobes of the lungs keep together as long as there is no infiltration If, however the elasticity of the lower lobe is affected by pneumonia, the difference in pressure at the upper border of the left lobe allows the fluid to accumulate between the lobes

Action of Endocrines on Serum Calcium—Leicher used de Waard's method, and determined the calcium as Ca ion He found in sixty healthy individuals a remarkable constancy among persons of the same age The average in the first 20 years is 106 mg in 100 cc of serum From 20 to 30 the average was 115 mg, then it decreased, at first (to 45 years) slowly, then quicker down to 108 mg in persons over 50 years of age The calcium content of the whole blood decreases quickly in the first 20 years (from 12 to 9), and presents another smaller diminution between 45 and 54 The amount of calcium in the serum does not change after ingestion of calcium salts prolonged for several weeks (20 persons), but is lowered by thyroid treatment, injections of pituitary extracts, and epinephrin Exophthalmic goiter and especially tetany had a lower, myxedema a higher calcium content No constant changes could be found under the influence of the sex glands, but it seems that pregnant women often have an abnormally low level in pathologic conditions

Deutsche medizinische Wochenschrift, Berlin

Jan 5 1923 49, No 1

Tuberculosis and Pregnancy G Winter and W Oppermann —p 1

*Pathogenesis of Carcinoma of Stomach Askanazy —p 3 Cont d

*Treatment of Glaucoma W Uthoff —p 6

*Action of Alcohol on Acidity of Gastric Juice K Frehe —p 11

*Pituitary Obesity H W Knipping —p 12

Diathermy in Surgery H Picard —p 13

*Respiration of the Skin O Gans —p 16

Acridflavin in Endocarditis H Mark and L Olesker —p 17

*Life Saving by Ventral Decubitus E Rautenberg —p 17

*Catheterization of Trachea in the New Born H Kritzler —p 18

A Rare Injury in First Cohabitation J Friedemann —p 19

*Labor with Flat Pelvis M Henkel —p 19

*Compulsory Vaccination and Blindness in Smallpox Hess —p 21

Pathogenesis of Carcinoma of Stomach—Askanazy mentions the importance of adenomas in chronic gastritis, and of ulcers, for the genesis of carcinoma, and deals chiefly with the origin of malignant tumors from heterotopic embryonal remnants in the gastric wall

Treatment of Glaucoma—Uthoff reviews the problem and treatment of glaucoma The chief point is the increase in intra-ocular pressure, with its deleterious influence, even if it occurs only in attacks as in simple glaucoma Repeated measuring of the tension will reveal the increase, and it is suggested by the dimmed rainbow vision Miotics relieve the tension, and may in rare instances even cure the process They are indicated in chronic simple glaucoma They are especially important in the pure noninflammatory cases, because the results of operation are not good in this condition General treatment has hardly any influence, since the affection is purely local He deals extensively with the surgical proceedings and recommends iridectomy, although the process progresses even after operation in about 5 per cent of the cases Some cases of severe myopia suffer from chronic glaucoma, which can be easily overlooked if examination of the field of vision is omitted

Action of Alcohol on Acidity of Gastric Juice—Frehe studied in 132 cases the influence of an addition of 25 or 10 per cent of alcohol to Ewald's test meal In healthy persons the acidity did not change In most cases of ulcer, the acidity was lowered, while it was usually increased in nervous dyspepsia

Pituitary Obesity—Knipping continued on nineteen patients Plaut's investigation of the specific dynamic action of food in obesity In most of these patients, although not all, other signs of pituitary disturbance were present In two of them a preparation of the anterior lobe of pituitary was administered and an increase of the specific dynamic action of food resulted Two dogs with a partially destroyed anterior lobe showed the same influence of the preparation

Respiration of the Skin—Gans studied the oxygen consumption of small particles of healthy and pathologic skin, and found a parallelism between the rate of oxygen consumption and the sensitivity to roentgen rays

Life Saving by Ventral Decubitus—Rautenberg recommends a position on the chest and abdomen, with the foot of the bed raised similar to the position used in reviving the drowned, in cases of edema of the lungs and in pneumonia in

the stage of lysis. Hypostatic pneumonia is also well influenced or prevented with this posture. The same mechanical principles are involved as in resuscitating the drowned.

Technic of Catheterization of Trachea in the New-Born—Kritzer uses exclusively soft catheters in which a semi-elastic bougie may be inserted. In order to pass the instrument into the trachea and not, as often happens into the esophagus, it is advisable to introduce the index finger into the latter.

Labor with Flat Pelvis—Henkel warns very emphatically against indiscriminate use of forceps. It is a mistake to believe that forceps can overcome a serious disproportion between head and pelvis. It should be used only when the disproportion has already been overcome by natural forces. Other indications and contraindications should be also kept in mind. If from six to eight regular tractions are without result, perforation of the head should be performed. Version after a forceps attempt is malpractice. If version is successful, there is no indication for forceps. If it is not it is a useless danger for mother and infant. Unsuccessful forceps attempts should be followed by perforation, unsuccessful version by embryotomy. Induced premature delivery, and especially symphysiotomy and pubiotomy, should be abandoned in favor of cesarean section.

Blindness in Smallpox—Hess calls attention to the great number of blind people after smallpox in countries without compulsory vaccination.

Munchener medizinische Wochenschrift, Munich

Jan 5 1923 70 No 1

- *Blood Pressure F. Müller—p 1
- *Colloid Treatment H. Siegmund—p 5
- Treatment of Cancer Kupferberg—p 6
- *Postoperative Irradiation of Cancer F. Winter—p 7
- *Treatment of Urethral Gonorrhea in Women Arneth and Fabritius—p 9
- *Indications for Thyroidectomy M. Lebsche—p 11
- Plastic Induration of Penis C. B. Hornicke—p 13
- *Surgical Treatment of Gastropnoia Pust—p 15
- Diagnostic Excision in the Bladder K. Scheele—p 17
- Treatment of Sleeping Sickness with Bayer 205 W. Menk—p 18
- A Needle for Ventriculography L. Benedek—p 19
- Technic of Ventriculography E. v. Thurzo—p 19
- Tuberculin Inoculation F. Wesener—p 20
- Suit for Alleged Obstetric Malpractice A. Doderlein—p 20
- Semmelweis and Lister W. v. Brunn—p 22
- Symptomatic Changes of Blood P. Morawitz—p 23
- German Youth Welfare Law M. Thumm—p 25
- *Types Seen by Pediatricians E. Moro—p 26

Blood Pressure—Müller reviews the history of blood pressure determination, and emphasizes its central regulation. Expelling the blood from a lower extremity does not change the blood pressure, even in cases with hypertension. The peripheral resistance (smallest arteries and capillaries) and not the central force (heart) determines the blood pressure. In cases of genuine hypertension the tunica media of all small abdominal arteries is hypertrophic from increased function (Huchard's presclerosis). This accounts for the fact that considerable hypertension may become normal. Arterio-sclerotic changes of the vessels are secondary. Affections of kidneys leading to insufficiency—even retention of urine—have an unquestionable influence. Further the constitution may play a part. He finds in the families of such patients migraine, asthma, gout, diabetes and arthritis. Women suffering from uterine fibroids have usually a high blood pressure which may diminish after operation (not after roentgen-ray treatment). The prognosis is not as bad as we thought before measurement of blood pressure became universal. Digitalis and caffeine may be given if the heart becomes insufficient and may even lower the blood pressure. Coffee and tea are allowed, nicotine and wine must be forbidden. Low diet may be tried although the general starvation during the war did not seem to influence hypertension. Moderate exercise is to be recommended. Venesections act symptomatically well. Hypertension is not a contraindication to any operation.

Colloid Treatment and Active Mesenchymatous Tissue—Siegmund found that the storage of different colloidal preparations in reticulo endothelial cells increases the resistance of mice against a subsequent infection. He found that

the mesenchymatous tissue which stores these substances, becomes more capable of taking up a new supply—including bacilli—and that it proliferates. Organoid structures develop in the adventitial tissue. They consist of reticular cells capable of storage and an indifferent hemopoietic parenchyma which may develop into different cells according to the substance injected. Silver induces chiefly myeloid formations, iron myeloid-erythroplastic elements, proteins cause a lymphocytic and cholesterol an endothelial proliferation. The action of colloids consists in stimulating these cells to greater activity.

Postoperative Irradiation of Cancer—Winter finds that his results with carcinoma irradiated after operation are a little better than in cases without after-treatment. The dosage requires further study.

Treatment of Urethral Gonorrhea in Women—Arneth and Fabritius emphasize the importance of energetic treatment of urethral gonorrhea in women even when the chief focus is in the cervix which must be treated mildly.

Indications for Thyroidectomy—Lebsche points out that the patient suffering from goiter and not the thyroid itself is the subject of treatment. Persons who previously had rachitis are very liable to postoperative tetany. In thyrotoxic heart disturbances it is better to wait until rest and sedatives have improved the condition. True goiter heart is ameliorated by operation. Patients with compression of the trachea should be treated surgically. Sometimes the dyspneic condition is latent because the patient has learned by instinct to avoid overexertion until an attack of suffocation convinces him of the necessity for an operation. There is no question about the treatment of a malignant struma cancer is to be suspected if a goiter starts to grow quickly in old people. The most difficult decision is in children with vascular goiter in which the clinical signs (not only the histologic changes) speak for an exophthalmic goiter while the aspect of the patient reveals cretinoid stigmas. Determination of the basal metabolism is a valuable aid in such cases. No goiter should be operated on merely for cosmetic reasons.

Surgical Treatment of Gastropnoia—Pust has devised a simple longitudinal folding of the stomach and reports twelve good results.

Types Seen by Pediatricians—Moro complains that the consulting pediatrician has to deal almost exclusively with neuropathic children. He describes several types. Increased temperature is sometimes simply due to preceding exertion. Some children have permanent rectal temperatures between 37 and 37.8 C. Opium lowers this harmless constitutional subfebrile state but pyramidon has no effect. Fever reacts in the opposite way. In vasolabile children the difference in the pulse in standing and reclining is great and increases after exertion; the rate in reclining may be even lower than before. Umbilical colic is usually associated with pallor during the attack. Most cases can be cured by suggestion. The faradic current works wonders in these cases of neurosis, and indifferent plasters applied with the proper suggestion are effective. The child should not be present during the whole taking of the history, and should not hear the diagnosis, unless it is negative.

Wiener klinische Wochenschrift, Vienna

Jan 4 1923 36 No 1

- Organotherapy in Neuroses and Psychoses Wagner Jauregg—p 1
- Capillary and Parenchymatous Bleeding P. Albrecht—p 4
- *Jarisch Herxheimer Reaction M. Oppenheim—p 7
- Wasermann Reaction in Cancer of Uterus R. Niedermayr—p 10
- The Epiglottis in Total Extirpation of Larynx K. Koller—p 11
- History of Vienna Medical School M. Heister—p 12

Organotherapy in Neuroses and Psychoses—Wagner-Jauregg recommends thyroid treatment in every case of retarded development of children. If a tumor of the pituitary is combined with a goiter or symptoms of hypothyroidism, thyroid tablets may improve the pituitary condition and even the hemianopia may be favorably influenced. Dementia praecox is a group of diseases. The use of thyroid and sex gland has sometimes a favorable influence in the early stages of the hebephrenic type. Yet one should not forget in considering the stimulation of the function of glands that

qualitative changes (dysfunction) are possible. Complete recovery followed this treatment only in girls in whom the psychosis started at puberty and sex development had been arrested in the infantile stage. Similar good results were obtained in nervous girls with hypoplastic uterus who started to menstruate very late. Tics of the pubertal age were also favorably influenced.

The Jarisch-Herxheimer Reaction—Oppenheim had 128 cases of Jarisch-Herxheimer reaction among 180 cases of syphilitic exanthemas. He observed them for two years and found that the cases which showed an intense reaction had an unfavorable course with regard to recurrences, their localization (liver, eyes, nerves), and the Wassermann reaction. Cases of tabes which have severe pains after injections of arsphenamin, are progressing. Similar reactions (dizziness, hallucinations) can occur in general paralysis. He found that mercury and arsphenamin are retained longer in the body after a strong Herxheimer reaction. To avoid these reactions it is well (except in the abortive treatment) to start with mercury ointment or with small doses of mercurv, before giving arsphenamin.

Wassermann and Meinicke's Reaction in Cancer of Uterus—Niedermayr found among twenty-five cases of carcinoma of the sex apparatus one cachectic case with a positive Meinicke test and a weak positive Wassermann test with inactivated serum (negative with active serum). One case had a positive reaction after roentgen treatment.

Zentralblatt für Gynäkologie, Leipzig

Jan 6, 1923, 47, No 1

Graviditas Ovarica Graviditas Tubaria Ovariae and Graviditas Tubaria O. Hoehne—p 2

*Parabiosis in Experimental Research R. Nissen—p 11

*Irradiation of the Spleen L. Nürnberger—p 19

*Treatment of Vulvar Pruritus A. Littauer—p 25

*Intraligamentous Ganglioneuroma W. Stoeckel—p 33

Enormous Cystoma P. Weischer—p 37

Parabiosis as a Means of Experimental Research in Sex Pathology—Nissen has found parabiosis applied to rats and rabbits a valuable experimental method of research in studying certain questions of sex pathology. His experiments make it seem possible that the bodily changes in the female in pregnancy are not caused by hormones but by nervous impulses. On the other hand, the Sauerbruch-Heyde researches furnish evidence that the inauguration of labor pains is brought about by metabolic products which pass in accordance with the humoral theory, from the fetus to the mother. Owing to the short existence of animals united by parabiosis, the difficulties of the investigations are very great.

Irradiation of the Spleen in Gynecologic Hemorrhage—Nürnberger reports that he tried roentgen irradiation in twelve cases of hemorrhage due to tumors of the adnexa and thirteen cases of hemorrhage of ovarian origin. In eight of the former and ten of the latter, the hemorrhage was arrested within three days, frequently on the day of the irradiation, and in a few cases within half an hour of the application. He therefore regards roentgen irradiation of the spleen as a valuable therapeutic measure in the treatment of hemorrhage of genital origin. In some cases irradiation is of no avail, but these cases promise valuable physiologic, pathologic and therapeutic discoveries.

Treatment of Vulvar Pruritus with Special Consideration of Thrush and Trichomonas—Littauer states that in cases of vulvar pruritus in the form of an oozing eczema the use of ointments usually causes an exacerbation. The best results are secured by dry treatment. The hot air jet and phototherapy, especially red light, are efficacious, but if the secretion has subsided it is better to use blue light which is also to be recommended in pruritus without eczema. For treating excoriations of the skin after the oozing has ceased, he finds 10 per cent silver nitrate solution the sovereign remedy; this requires much patience on the part of the patient and physician but gives excellent results. In a few refractory cases of vulvar pruritus, extirpation of the vulva is the last resort. The operation presents no technical difficulties and can be performed under local anesthesia. The labia majora et minora, together with the clitoris are removed. The hemor-

rhage is easily controlled, if all the tissue to be removed not excised at once. The excision is best begun from below. The plastic result is very good, and superficial. It would not reveal any change of the introitus following the operation. Even excision does not help in all cases, especially if the cause of the pruritus is elsewhere than in the tissues removed. Another cause of vulvar pruritus is thrush (*Monilia albicans*), which sometimes requires careful inspection for its recognition. Treatment consists in painting the affected area every other day with a 10 per cent solution of pyoktanin, which unfortunately stains the clothing for a time. In some cases he has found roentgen irradiation effective. *Oxyuris* or *Trichomonas* infection may also be suspected.

Intraligamentous Ganglioneuroma—Stoeckel reports what seems to be the first operative case of ganglioneuroma of the true pelvis in a woman. These tumors are comparatively rare only about two dozen having been thus far reported. They are found on the face, abdomen and other regions of the body. They are referable to disturbances of the sympathetic nervous system, and are sometimes multiple and sometimes solitary. They are composed of ganglion cells, nerve fibers, and connective tissue fibrils. The histologic structure, as Borst states, resembles a broken-down sympathetic ganglion.

Zentralblatt für innere Medizin, Leipzig

Jan 6 1923, 44, No 1

Determination of Real Blood Pressure H. Chantreine—p 1

Casopis Lekaru Ceskych, Prague

Jan 6, 1923 62, No 1

*Tubercle of the Optic Disc and Choroid J. Janku—p 1 Cont'd

*A Pelvimeter for the Conjugata Vera V. Rubeska—p 8

Present Status of Acidosis V. Laufberger—p 9

Hospitalstidende, Copenhagen

Jan 10 1923 66, No 2

*Partial Heart Block O. V. C. E. Petersen—p 21

Partial Bundle Heart Block—Petersen remarks that electrocardiography is the most reliable criterion for hypertrophy of either ventricle. Systematic electrocardiograms from heart patients have confirmed that partial bundle block is an early phase of complete heart block, and a sign of an extensive affection of the myocardium. He tabulates the details of 28 cases of partial bundle branch block encountered in the course of five and a half years in 25 men and 3 women. Nine kept in comparatively good stationary condition, in 6 the course seemed to be gradually progressive, and 12 have died. Only 2 of the 28 had edema. The most frequent symptom, except panting and palpitation which were present in all, was angina pectoris. Eighteen of the patients had angina pectoris, with frequently repeated attacks.

Hygiea, Stockholm

Jan 16 1923 85, No 1

*Disinfecting Action of Quinin K. G. Dernby—p 1

*Neurology of the Abdominal Wall G. Soderbergh—p 3

Disinfecting Action of Quinin Derivatives—Dernby's research seems to suggest that the solubility of quinin derivatives diminishes as pH increases, also that addition of sodium bicarbonate or other alkali enhances the bactericidal power. Lack of alkaline reaction may be the explanation for the difference between the disinfecting power of certain quinin derivatives in the test tube and in human tissues.

Neurology of the Abdominal Walls—For ten years Soderbergh has been studying the motor functions and reflexes in the abdominal walls. This is his fifteenth publication on the subject and he reviews the conclusions and shows their practical application in five cases.

Ugeskrift for Læger, Copenhagen

Jan 25 1923 85 No 4

Recent Progress in Dietetics C. Jurgensen—p 59 Begun in No 1 p 37

The New Danish Law on Marriage—p 63

Contract Practice in Norway H. Rasmussen—p 66

